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THE FARM AS A MANUFACTORY.

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The benefits derived from a judicious rotation of crops are now all but universally admitted. The reasons assigned for the necessity or advantage of rotation are very various. A very plausible theory advocated by De Candolle, attributed the necessity of rotation to a supposed excretion from the rootlets of plants. These vegetable excrements were said to be very injurious and even poisonous to the same kind of plant that excreted them, but were of great fertilizing value to other plants of a different character. Many experiments have been made to test the truth of this beautiful theory, the results of which are adverse, and force us to believe that though some plants may excrete matter that is not suitable food for them, our commonly cultivated plants, as wheat, maize, potatoes, meadow grasses, &c., do not thus excrete injurious matter; but that if the land be kept clean and the required fertilizers or constituents are supplied, these plants can be grown annually on the same soil as long as desired.

Another theory, advocated by many of the ablest chemists of the age, refers the advantage of rotation to the variable amount of inorganic constituents required by the different crops forming the rotation. The generally adopted system of rotation in the best farmed districts of England, and which an experience of fifty years has sanctioned as being judicious and beneficial, is as follows: First year—wheat after clover. Second year—turnips, partly eaten on the land by sheep. Third year—barley or wheat seeded with red and other kinds of clover. Fourth year—clover, mown for hay or eaten on the land, followed by wheat in the fall at one plowing; and so on as before. The advocates of this theory point to this well established system of rotation as practical evidence in support of their chemical deduction, and reason thus: The ash of wheat contains 50 per cent. of phosphoric acid, the ash of turnips only 11 per cent. We can not grow wheat after wheat, because the land is exhausted of available phosphoric acid; but turnips, requiring only a small quantity of phosphoric acid, will do well after wheat, as experience proves.

In answer to this, we say that experiments show that an application of an ammoniacal salt containing not a particle of phosphoric acid, will cause the wheat plant to grow luxuriantly and yield successive *annual* crops of thirty bushels per acre, while on the same soil turnips will not grow larger than radishes, though dressed with every kind of manure in which phosphoric acid is not a constituent; but an application of available phosphoric acid produces annually good crops of turnips. These experiments, extending over nine successive annual crops, together with the fact that phosphoric acid is not used in general practice as a manure for wheat, while it is applied to an enormous extent and with the most beneficial results as a direct manure for turnips, are sufficient to dis-

prove the correctness of the above theory even though they gave no other in its place. We conclude from these facts and others of a similar character, that the relative proportion of any of the constituents of plants is in no case a certain indication of the relative proportion in which these ingredients should exist in an available condition in the soil or be supplied in manure. This can only be determined by inductive field experiments.

The theory we have adopted, though not so plausible as the one under discussion, is far more in accordance with the observations and general practice of intelligent agriculturists, and we know of no well ascertained facts that throw doubt on its correctness. It is in brief this: The principal requirement of the wheat and other cereal plants is ammonia; that of turnips, phosphates and carbon. Wheat *destroys* a large quantity of ammonia during its growth, and *collects its carbon from the atmosphere.* Turnips and clover, if supplied with available phosphates and carbon, *collect their ammonia from the atmosphere.* The turnip crop contains a large quantity of nitrogen thus obtained from the atmosphere. Its consumption on the land by animals destroys the greater part of the carbon and abstracts considerable phosphoric acid, while nearly the whole of the nitrogen is left on the land in the excrements of the animals, and thus supplys the following grain crop with the required ammonia as well as a large amount of potash and other mineral constituents. The same remarks apply to the succeeding clover crop. It collects its nitrogen from the atmosphere, and leaves it on the land in the roots of the plant and in the excrements of the animals consuming it, and so affords the indispensable ammonia for the following wheat crop.

We have considerable doubt in respect to agricultural plants collecting, to any great extent, ammonia and carbonic acid from the atmosphere through their leaves. We are inclined to think that what they obtain from the air is brought to the roots in rain. The fact that broad-leaved plants obtain a large amount of organic matter from the air in some way, is not necessarily opposed to our view, inasmuch as these plants, having large surfaces exposed, evaporate a proportionably large amount of water, and so take up more and with it imbibe more organic matter, which is retained in the plant. It has been justly supposed that if plants obtained their organic matter from the atmosphere through their leaves, a manure that would increase the size of the leaves would increase the amount of organic matter obtained by the plant from the air, and enable it to dispense with the organic matter of the soil. An ammoniacal salt applied to the turnip crop greatly increases the quantity of leaf per acre, but it does not increase the amount of organic matter in either leaf or bulb, which should be the case did increased leaves enable the plant to collect an increased quantity of organic matter from the air. On the other hand, an application of superphosphate of lime, which greatly increases the under ground collecting apparatus, or lateral fibrous roots, gives a very small proportion of leaf and a very large quantity and high proportion of organic matter in bulb and leaf. This would indicate that the power of agricultural plants to collect their food from the air is dependent more on the extension of roots than on an artificial extension of leaves. What we wish to be understood, therefore, when we say that plants of certain orders collect their nitrogen from the atmosphere, is not that they inhale it either as nitrogen, ammonia, or nitric acid, through their leaves, but rather that they retain that which is brought to them from the air in the rain water which they take up and evaporate.

In our opinion, the whole theory of the English rotation of crops hangs on the destruction of ammonia during the growth of wheat and other cereals, and on the non-destruction or retention of the ammonia by other orders of plants, such as the Cruciferæ and Leguminosæ, and possibly of all plants containing but little silicic acid or starch. If we admit the truth of this theory, and examine the effect of our too common system of rotation—such as corn, barley, wheat, timothy, with perhaps a little clover—we can easily perceive that our soils would be sooner impoverished of nitrogen than of any other element. This would not be the case if there was no destruction of ammonia during

the growth of cereals, for the ammonia brought to the plants by rain is probably quite as much as that which a large crop of wheat, &c., contains. The soil under such circumstances would be first impoverished of the mineral elements or inorganic constituents of plants, and man would possess the power of *utterly exhausting* the soil, which under existing laws is mercifully withheld from him. We know that he can impoverish to an alarming extent the soil he tills, but he can not exhaust it in such a manner but what a skillful farmer can restore it to fertility without, in most cases, the direct application of the removed inorganic ingredients. That is to say, the cultivation of our common crops, from exhausting the soil of its organic matter and its available inorganic ingredients, impoverishes it to that degree when crops can no longer be grown without serious loss; yet at the same time there is lying latent in the soil sufficient inorganic constituents of plants for large crops, and which a better cultivation and a more scientific rotation of crops would render available and the farm productive. We admit that were a cheap source of ammonia discovered, it would then be not only possible but quite easy to exhaust our now fertile wheat soils, so that they could not be restored without carrying back the mineral elements removed in the crops and animals exported from the farm. But such a state of things does not exist, no cheap means of affording ammonia to plants having been discovered; and at present, in this country at least, we know of no way of supplying our cereal crops with the required ammonia without at the same time increasing the available inorganic constituents. Thus, if we grow clover, turnips, beans, or peas, or purchase oilcake, bran, &c., to be consumed by cattle, we supply ammonia, but at the same time we also supply the necessary available minerals: and, as we have said before, these nitrogen collecting plants require more available mineral matter to exist in the soil than do wheat, corn, &c.; so that when the soil became only partially impoverished, clover and turnips would not thrive, but little ammonia would be supplied for the cereals, and their yield would be so small that the soil could no longer be cultivated with profit; and this while there was still a large amount of the inorganic constituents existing in the soil. Hence, so long as our lands will produce good crops of clover, peas, beans, &c., we may rest assured that there is no lack of available inorganic constituents in the soil for a very large crop of wheat. If, under such circumstances, we obtain by good tillage not more than twenty bushels of wheat per acre, we may safely conclude that all that is required to raise it to thirty-five or forty bushels, is 75 or 100 lbs. of ammonia in any available form. If clover, peas, turnips, &c., do not thrive, the soil is probably deficient in available inorganic matter; and in such circumstances an application of bone dust, superphosphate of lime, unleached and leached ashes, containing as they do the deficient substances, will be attended with much benefit for these crops. These clover and pea crops will in their turn furnish the required ammonia and minerals for the succeeding crops of wheat and corn; and so, in this *indirect manner*, an application of inorganic ingredients is followed by increased yields of the cereal crops. We are aware that there are many well recorded experiments in which ashes, lime, &c., have given greatly increased crops of wheat and corn, yielding, in instances that have come under our own observation, fifty bushels of wheat per acre; yet these instances, however numerous they may be, by no means disprove the correctness of the principles here laid down; they rather, to our view, confirm them.

It is well known that ashes, lime, &c., greatly accelerate the decomposition of organic matter; and that in many of our lands there is much organic matter lying latent in the soil in such a condition that plants can not take it up. An application of lime or ashes to such soils would give vitality to this organic matter; the nascent gases would act on the mineral matter of the soil, and both inorganic and organic matter would be rendered available to the plants. In the instances mentioned where ashes and lime have yielded fifty bushels of wheat per acre, the increase was most undoubtedly dependant, not on the manure supplying the actual inorganic constituents of the wheat plant, but in de-

composing the organic matter of the soil, and thus supplying the required ammonia. The gases eliminated by the action of the alkaline matter would in their nascent state act on the minerals of the soil, changing their composition, rendering them soluble, and in a proper condition for assimilation by the plants. There is nothing, therefore, in the occasional benefit derived from an application of ashes to the wheat crop, that at all militates against our theory.

POTATO CULTURE.

The following interesting experiments were made by H. H. Eastman, of Marshall, Oneida county, N. Y., in consequence of the premium offered by the New York State Agricultural Society. Mr. Eastman will continue the experiment next season, and valuable results are anticipated. The experiments are published in full detail in the December number of the *Journal* of the Society, from which we extract the most important results.

The potatoes were planted on the 18th of May, in hills three feet apart each way, one whole potato in each hill. Thirty hills were taken for each experiment. The weight of the potatoes planted was 6 lbs. on each portion, or about 16 bushels per acre. They were hoed twice—once on the 18th of June, and again about a fortnight afterwards. The following are the selected results:

Description of Manure.	Quantity manure used, and how applied.	Bushels of potatoes obtained per acre.
	No manure,	166
Hog manure,	Half shovelful in each hill,	271
Equal quantities of hog manure, ashes, lime, and gypsum,	Handful in each hill,	163
Long unfermented manure,	Two-thirds shovelful in each hill,	203
Compost,	do. do. do.	209
Fermented or rotted manure,	Two-thirds shovelful in each hill,	211
do. do.	do. do. on top of hill,	183
Manure of fowls,	Large handful in each hill,	229
do. do.	do. on top of hill,	174
Ashes,	Handful in each hill,	159
do.	do. on top of hill when up,	146
Lime,	Half handful in each hill,	141
do.	do. when up,	144
Sulphate of lime (gypsum,)	Tablespoonful in each hill,	162
do. do.	do. when up,	156
Sulphur,	Teaspoonful to each hill after potatoes up,	116
No sulphur,		140
Saltpetre, (nitrate of potash,)	Teaspoonful to each hill when up,	139
No saltpetre,		143
Gypsum,	Tablespoonful when up,	156
No gypsum,		130

Hog manure applied in the hill gives the largest return—271 bushels, or 105 bushels more than the unmanured lot. This is in accordance with the common opinion among practical farmers, that hog manure is the best of all manures for potatoes.

A large handful of fowl manure applied in each hill gives the next best increase—229 bushels, or 63 bushels more than the no manure lot.

Fermented or rotted manure gave 211 bushels, while unfermented gave but 203 bushels. We must be careful how we reason from this result, for the same quantity

of rotted manure was used as of unfermented, whereas in fermentation the manure was probably reduced one half; so that instead of each receiving the same amount of manure, the hills dressed with the rotted dung got twice as much as those having the raw manure. To make the experiment satisfactory, the hill dressed with the rotted manure should receive no more than what would result from the fermentation of the amount given the hill dressed with the raw dung.

The mixture of hog manure, ashes, lime, and plaster, gives three bushels less than no manure. Such a compound is very well as an experiment, but should on no consideration be adopted in practice. Many farmers we know still adhere to the barbarous custom of mixing lime and unleached ashes with their barnyard manure, and by so doing drive off nearly all the ammonia, thus rendering the manure nearly valueless. For nearly all our cultivated plants ammonia is the most valuable ingredient of a manure; and to thus foolishly expel it, is, to say the least, supremely ridiculous.

The application of ashes, lime, sulphur, and saltpetre, is attended with no benefit.

It has been supposed from the fact that the ash of potatoes contains a large proportion of potash, that potash supplied as manure would be of great value. The above experiments do not sustain this theory. The great benefit attending the application of Peruvian guano (which contains scarcely any potash) to potatoes, is also another fact opposed to this idea. If further experiments corroborate these results, we must conclude, not that potatoes do not require a large amount of potash, but that potash relatively to other constituents is present in the soil in an available condition in sufficient quantity, and that the increase of the potato crop depends on the application of other substances, probably ammonia and phosphates.

DECENNIAL LIMEING.

In our recent travels through Pennsylvania, we received an interesting account of a farm in Lancaster county which has been one hundred years under cultivation, and during the last fifty has been limed every ten years. It was much exhausted when the use of lime was first resorted to for its renovation, but the application of ten bushels per acre developed elements of fertility before unavailable in the growth of agricultural plants. After the lapse of ten years, the good effects of the lime disappeared, and a new dose of ten bushels of caustic lime was again administered to each acre. The soil is a gravelly loam, and now yields thirty bushels of wheat per acre. Clover is grown in rotation with wheat, and either turned under with the plow, or the land is manured with dung formed by the grass and hay consumed by domestic animals.

The fact most interesting to practical farmers, is the great benefit derived from the average application of a bushel of lime per acre per annum for a half century, without intermission. Explain this fact as we may, tens of thousands of the best acriculturists in New Jersey, Pennsylvania, Delaware, and Maryland, periodically apply calcareous matter to renovate their partially impoverished fields. Long and successful experience has taught them the permanent (so far as anything relating to the soil can be permanent) advantages of decennial limeing pastures, meadows, and tilled lands. Some require much more lime to correct all acidity, and decompose the phosphates of iron and alumina, which in that form are worthless to the farmer. Combined with lime, phosphoric acid forms the earthy part of the bones of all animals; and as this acid very often abounds in soils united with iron, or alumina, or both, from which lime extracts it, forming bone-earth, we see why lime operates the same as pulverised bones. It is true that ground bones contain considerable organic matter from which ammonia is formed, which is exceedingly valuable; nevertheless, experience seems to prove that by

growing clover and peas on limed land, the soil may be supplied with the elements of ammonia from the atmosphere, and perhaps in sufficient quantity to produce a good crop of wheat every other year.

How much artificial aid an acre of fair common earth really needs in the course of a century, to maintain its fertility, if constantly under the plow, is the most important problem in husbandry. We have always regarded with suspicion, and as of little value, every theory on this subject. What we contend for is the test of reliable experiments in ordinary farming. Truths thus established will be invaluable to the great farming interest; and, sooner or later, the cultivators of the soil will see and acknowledge the necessity of experimental farms, to determine what amendments, and how much of each, a farmer should use in the production of any crop. Lime is only one substance needful in arated earth; and what is true of it may apply with equal force to potash, magnesia, soda, ammonia, carbon, and chlorine. The comparative cheapness of lime, however, renders its use more general, and its merits are the best known of all mineral manures. For fifty years its consumption for agricultural purposes has steadily increased in this country, and is likely to continue so to do for a century to come.

EDITORIAL CORRESPONDENCE.

FARMING NEAR THE CAPITAL OF THE UNITED STATES.—The District of Columbia has a climate happily exempt from the protracted winters and cold of the North, and the uncomfortable and parching heat of the South. It is the golden mean between extremes, and combines a large share of the advantages regarded by many as peculiar to distant latitudes. Fig trees rarely fail of bringing two crops to full maturity in a year; while every fruit grown in Maine, flourishes, if properly planted and cultivated. Near the federal metropolis, the cotton plant of the South and the timothy grass of the North find their respective boundaries. The same is true of persimmons and cranberries, apples and figs, currants and peanuts, plums and sweet potatoes. In no other climate do the peach, pear, quince and vine, attain a more perfect development. Nature encourages the planter, the farmer, the gardener, and the orchardist, with equal bounty. The record of the rain-guage, for a half century, shows that injurious drouths are rare indeed; while the thermometer tells of lengthened seasons for the abundant growth of every agricultural staple, and every horticultural luxury.

If the soil were generally rich, the water would be less pure and salubrious, and the country comparatively unhealthy. Happily the land is not over-charged with decaying vegetation. The air, away from stagnant streams, (which are not common,) is remarkably pure, and the water all that can be desired of this important element of universal consumption. Although not fertile, when compared with the soil of the West, the land near Washington is kind, easily cultivated, and very susceptible of permanent improvement. It lacks calcareous matter, and limeing is the *sine qua non* with skilful farmers, who wish to bring all their fields into the best possible condition for the application of manure. Sand, clay, and oxides of iron, without sufficient lime, compel the husbandman to waste manure if he would render such earth permanently productive, or even temporarily so. Flint, alumina, and iron, have as strong claim to be called manure, and treated as such, as lime. The former are staple ingredients in all soils, and so is the latter; but calcareous matter is less abundantly diffused in the geological strata which constitute the outer crust of the planet, than compounds of silica, alumina, and iron. There are soils, however, in which soluble silica or flint is deficient; and others that lack either iron or alumina, or both.

To be successful and profitable, farming near the Capital of the United States should be conducted on scientific principles; for the cheapest manure costs now $50 per ton, which is Peruvian guano. Raw material so expensive, must be worked up with skill and knowledge, or the producer of crops will lose money in the operation. At present, prices are so high that one may buy manure at almost any rate, and realize a profit. Hay is $30 per ton; milk, 8 cts. a quart; fresh butter, from 30 to 40 cts. a pound; and fresh pork, $8 per 100 lbs. These prices have operated to bring into the District, and the adjacent, counties in Maryland and Virginia, more immigrants from the North in the last twelve months, than had come in the previous five years. Congress is expending over

$5,000,000 dollars on the enlargement of the Capitol; the Patent office will have cost $2,000,000 when completed; and the other public buildings at least $7,000,000 more. By the Susquehannah railroads (to be completed in a few months) both Rochester and Buffalo will be thirty miles nearer Baltimore than New York; and only eight miles farther from Washington on tide water, than the great commercial metropolis.

The heart of this wonderful Republic has been more neglected, in an agricultural point of view, than any other part of it. Baltimore has a population larger by 30,000 than Boston. Washington contains 50,000 souls, to say nothing of the old cities of Georgetown and Alexandria. The best crop grown is hay; and by going from ten to fifteen miles from the city, fair grass lands may be bought at from five to twenty dollars an acre. The dairy business is capital; and potatoes are seldom worth less than $1 a bushel. Nine months in the year there is a great demand for cream in Washington, for making ice creams, and farmers get a dollar a gallon for all they can produce. Eggs and poultry are proportionally high. Men born and reared on tobacco plantations, naturally, and perhaps wisely, abstain from engaging in these thousand and one small matters. They understand planting, and it gives them wealth and enjoyment; while the multifarious trade of the northern farmer is to them Greek and Hebrew.

Labor is not high. The writer owns and cultivates a farm in the District, and gives a good hand $150 a year, who boards himself, but is found a house and firewood. Men who hire by the month or year, and are boarded, get from $75 to $125 per annum. Market gardening and fruit growing pay remarkably well near the city. Wood sells at from $5 to $6 a cord, and many have bought land so that they make enough on the wood to more than clear the land of all encumbrance. Such bargains are becoming scarce, although some, doubtless, may yet be found up the canal and river. The Chesapeake and Ohio canal is rarely closed a day by ice, and carries a volume of water five feet by fifty; or it is some 60 per cent. larger than the un-enlarged Erie canal.

Oyster shells make the cheapest lime for agricultural purposes, and cost only a cent a bushel in Washington. Stable manure is sold at a dollar a load. Night-soil ought to be all consumed as a fertilizer, but it is scarcely used at all. Gypsum costs from $3 to $5 per ton; it is brought as ballast from Boston and Nova Scotia. On land properly treated, clover grows finely. Proper treatment consists in draining where it is needed, in limeing and tillage, not forgetting to manure if the land happens to be quite poor. Good clover never grows on a soil that is really exhausted, or naturally sterile.

Excellent crops of wheat and corn have been grown in Montgomery county, north of Washington, in Maryland, and in Fairfax county, in Virginia, during the past season. Corn pays much better than wheat, for the forage obtained in cornstalks, blades and shucks, will sell in market for more than the cost of making the crop. In skillful hands, no other plant is so prolific in food for man and beast as the indigenous Indian corn. The amount of forage that may be raised on an acre is, to the unitiated, almost incredible. Deep subsoil plowing, liberal manuring, and seeding in drills, present an outline of the system of culture for green feed, or hay, to be consumed by dairy cows. Mr. Charles Calvert, President of the Maryland State Agricultural Society, grows some 30,000 bushels of turnips a year for his milch kine, which are fed with cut straw, hay and corn fodder. Mr. C. is the principal proprietor of the largest hotel in Washington, which he supplies with milk, cream, and garden vegetables. He is the lineal descendant of the first governor of the province of Maryland, by the name of Calvert, (a near relative of Lord Baltimore,) and his estate contains nearly 3000 acres, having a beautiful mill-stream running over four miles through it. Milk and hay are the leading products sold from this magnificent farm. The dairy consists of improved Short-horns, with a sprinkling of Ayreshires and Alderneys. "Riversdale" is on the railroad to Baltimore, and near Bladensburg. Mr. Calvert will give 200 acres not far from the railroad stopping place, for an Agricultural College, provided there is public spirit enough in the country to endow one institution of the kind, in a nation of farmers. Of the $50,000,000 annually paid into the federal treasury by the American people, not over half is really needed for the wise and economical administration of the government. The people know this, and know also that their children greatly need a thorough education; nevertheless, they do not lift a finger to apply the surplus in the treasury to educational purposes.

"Arlington," on the Virginia side of the Potomac, and opposite Washington, is the residence of George Washington Park Custis, the adopted son of Gen. Washington. The farm contains 1100 acres, and its venerable proprietor is one of the Vice Presidents of the United States Agricultural Society, the President of the Alexandria County Society, and the devoted friend of the great farm-

ing interest. Mr. FRANCIS P. BLAIR has a well improved farm, as that of Mr. RIVES, proprietor of the *Washington Globe*, soon will be. We must, however, take another occasion to describe the practice of the best farmers near the Capital of the United States. Suffice it now to say that a spirit of industry and improvement has been awakened, which promises the most auspicious results. Vineyards and extensive orchards are being planted, and the promising commencement of a new order of things is everywhere visible. The Metropolitan Mechanics' Institute will hold its first fair, commencing on the 24th February and extending beyond the 4th of March, in the hall of the east wing of the Patent Office, which is 270 feet long and 70 feet in width. The building for the steam power is already up.

If the farmers and mechanics of the District are true to their own fame, and true to the great classes to which they respectively belong, they will soon lay the foundation of an Industrial University worthy of a self governing people—worthy of the most advanced stage of human progress—and worthy of the brilliant future of this republican empire. The United States Patent Office is now a school of applied sciences, and not a bad one. The Smithsonian Institution offers to the student many, and some peculiar, advantages. All the essential elements of a National University abound in Washington and the District. Let 100 acres be highly cultivated by students, and they may board themselves comfortably at a cost of 75 cts. a week. For such, we have 109 acres near the city, on which are a good stone quarry, three fine and durable springs of water, and oak and chestnut timber enough to cut from 900 to 1000 cords of wood. To overcome the expense of board and bring learning and science near to, or upon the farm, and into the workshop, are objects which the writer has studied and cherished from his childhood. Knowledge of a commanding character, and honest manual labor, are soon to be united in this country. The hope of the world demands the perfect union of the best physical with the best mental training or education of youth. From the sweat of his face man can never be wholly exempt; nor is it possible for universal suffrage to govern wisely in ages to come, without that intellectual culture which science alone confers. King Numbers holds his court at the federal metropolis, and there, of all places should public opinion be in perfect harmony with the highest interests of the farmer and the mechanic. These interests involve something more than dollars and cents, and we can never prostitute either our pen or journal to any mere mercenary considerations. Agriculture is a means, not an end; and it would be well for a person to understand for what good purpose he is living. Not to know this, is to be ignorant indeed. Are we here to scratch the earth a few years, consume its fruits, waste its elements of fertility in cities and villages, and then leave it that another and more numerous generation may do likewise? This is a narrow and unsatisfactory view of humanity. Our capabilities scorn such grovelling companionship with the brute; our rising aspirations seek, and instinctively claim, a nobler destiny; our *duty* exacts not impossibilities, but an earnest and ceaseless effort to leave the world better than we found it.

BRITISH AND AMERICAN AGRICULTURE.

(*Continued from Page* 17.)

B. I have several times been on the eve of coming up to have a little more talk about the old country, but it has been so remarkably mild for the season, hitherto, that I have been uncommonly busy fixing fences, and making and hanging new gates. There is always plenty of work on a farm, if it is kept in anything like decent order, and such a winter as this gives one a good opportunity of putting things straight and lessening the amount of work necessary in the spring and busy season. I suppose this is some such a winter as they have in England.

A. Up to this time we have indeed had comparatively no winter, and it is a mercy we have not, for such was the scarcity of fodder in many places, last year, that if we have a very severe winter it would be next to impossible for the farmers to winter their cattle. I have let my sheep run out into the meadow, where they find some little grass, sweetened by the frost, which they eat and do first rate. This is very similar to what last winter was in England. It did not freeze hard enough for the water to bear, more than three times all the while I was there, and then it did not last but a few days. The English appear to be remarkably fond of skating, and make the best use of what little falls to their share. I recollect one morning while in London, when the water would bear—

and but barely bear—the cockneys turned out in thousands to skate on the "sarpentine" in Hyde Park. The ice broke in several places, but there were plenty of police on hand, and though many were well ducked none were drowned, and the rest kept on, men, women and children, playing various games and enjoying themselves first rate, apparently thinking nothing of the risk they ran of taking a cold bath or of finding a watery grave.

B. Well, I much prefer our ordinary old fashioned eastern winters with three or four months steady sleighing, to this miserable, muddy, misanthropic weather, even if it is English.

A. The English farmers dearly love a hard winter. They are in the habit of plowing their land in the fall and throwing it up into ridges, so as to have as much surface as possible exposed to the meliorating influence of frost. If they get some good hard frosts, most of the worms are destroyed, the growth of weeds is checked, and the land works well in the spring, which is often not the case when they have a very open winter.

B. I suppose they plow at intervals, when the weather will permit, all through the winter months.

A. Some farmers are in the habit of doing so, but the most intelligent do not. They think it is advisable to stir the soil only when it is in a fit condition. If plowed during the winter, when the land is wet, it is always, as they express it, "unkind" in the spring and requires much more labor to bring it to a fine tilth. Some farmers were even beginning to doubt the economy of plowing their light turnip soils at all in the fall. A farmer with whom I spent some time, in Shropshire, directed my attention to a portion of a field of turnips that looked much superior to the turnips adjoining. On inquiring the reason for this difference, he said they had all been treated alike, except that the part which looked the best was not "pin-fallowed"—fall plowed. He thought that the fall plowing had not only injured the crop, but that the land required more working in the spring than that which lay untouched during winter. It was the custom of the country, however, to fall plow, and his landlord would think him a very slovenly farmer if he did not fall plow. From what he said I gathered that this was his greatest reason for working his sandy soil during winter. Oh, preserve us from a large land-owning gentry and their old fogy lawyer agents. They are the curse of "merrie England." But free trade is gradually undermining this and other institutions, and slowly reforming some of their more glaring abuses.

B. I think fall plowing of heavy clayey soils is a good practice, and attended with many advantages; but though it is sometimes convenient to fall plow light soil for corn, I think it is not to be generally recommended. It is getting quite common with many farmers to fall plow all their land for hoed crops.

A. I think we do not suffer so much from washing during winter in the North-Eastern States as they do in England. There the land is not frozen, and a continued washing goes on all winter. With us the land is locked up with frost and is not washed at all till the frost goes, and then a greater part of the winter's fall of water passes off before the soil thaws. So that I do not think fall plowing light soils so injurious with us as with the English farmer.

B. I suppose the English farmers use lime as a manure, to a very great extent.

A. I was told that not a tithe as much was used now as ten or fifteen years ago. The introduction of guano and of superphosphate of lime, revolutionised English farming in this particular as well as in many others. Many old fashioned farmers still lime, as formerly, but the practice is generally abandoned. Lime costs much more than guano, and is not apparently so beneficial, tho' probably more lasting.

B. I thought lime was very cheap there and did not cost anything like so much as guano and artificial manures, and that the use of lime and the practice of under-draining were the great causes of England's superior farming.

A. That is probably true to a certain extent, yet it is doubtless true that the use of lime as a direct manure is not so extensive as formerly. Lime is nearly as high there as here, and as they use from 150 to 300 bush. per acre, and as it takes considerable labor to cart and spread it on the land, you can see that it is a very expensive manure.

B. Why do they apply such large quantities at once. I should think smaller doses, oftener repeated, would be better economy.

A. Several good farmers told me they had found by experience that it did not pay to apply less than 150 bush. per acre; land once limed did not require it again for 20 years. Thirty bushels of wheat do not contain more than a pound of lime. A bushel of lime would certainly supply all

that a very large crop would require, so that the benefit of lime appears to be from other reasons than that of supplying the crop with its constituent lime.

B. To what do you think the value of lime in agriculture is owing? I have always supposed that the superior wheat-producing qualities of Western New York lands were owing to the large amount of lime they contain; and that the reason why the eastern counties of the State were not so well adapted for wheat, was because they contained so little lime.

A. I am not much of a chemist, though I have read all the works on agricultural chemistry that I have met with. There appears to be a great difference of opinion as to the cause of the good effects of lime on the soil. Some think that it is owing to supplying an actual and indispensable ingredient in all our cultivated plants. But, as I have said before, if this is the reason, it is foolish to apply such large quantities, a bushel an acre being amply sufficient for any crop. Others think it is owing to the fact that lime, when mixed with soil, renders the potash which it contains soluble and immediately available to the plants. Others, again, think that the value of lime is chiefly owing to its rendering the organic matter of the soil—especially the nitrogen—readily available as food for plants, and therefore say that it is useless to lime land that has been exhausted of organic matter by long cultivation and tillage. Which of these various theories are right, I do not know, but am inclined to think that all of them are more or less true; that lime in itself furnishes food for plants, and that it renders the potash and ammonia of the soil immediately available. It is also of great use on soils, containing sulphate of iron (green vitriol) which is injurious to vegetation; the lime decomposes this salt and renders it innoxious.

B. I had no idea that the reasons for applying lime to land were so many and various. This part of agricultural science alone appears to be a subject for deep study and investigation. For my own part, I know very little about chemistry, except what I read in the *Genesee Farmer* and other agricultural papers. I suppose the English farmers are well posted up in rural science.

A. As a general thing English farmers know less about science than we do; nine-tenths of them do not take any agricultural paper at all. There are but three or four agricultural papers published in the country, and they have but a very limited circulation. The lowest price of an agricultural paper is $5 a year. I believe the *Genesee Farmer* has a much greater circulation than all the English agricultural papers put together, and I think it would pay some of our enterprising publishers to go there and start a cheap monthly paper. England has more and abler scientific men, more wealthy, educated gentlemen, who give their attention to rural science, and who make experiments and endeavor to search out the hidden principles of agriculture, than we have; but for the number and proportion of intelligent, industrious, enterprising farmers, we are ahead of any nation I have visited. We know far more of any discoveries that are made in England than do the English themselves. If anything sufficiently important is discovered, a Collins steamer will bring it across the ocean in a little over a week, and the electric wires will convey it from one end of this great continent to the other in a few seconds. Our innumerable presses deal it out to their millions of readers, and thus it is known and acted on here before more than a few learned individuals are aware of the affair in Great Britain. This is neither imagination nor exaggeration: it is literal fact. We know everything that transpires in England; the English know little or nothing of what is invented or done here. Look at the excitement caused by the appearance of the American Reaper in England, after it had been in successful use here for years and had got to be quite an old story. Then again, our dirt scraper, or, as the English called it, the "American Horse-Shovel," was equally new and valuable to them. At one of the monthly meetings of the Royal Agricultural Society, Lord Clive, and several other eminent agriculturists, alluded to this great invention, with highly commendatory remarks.

B. How do they level down banks and throw up roads, &c.

A. Either with wheel-barrows or lifting-carts drawn usually with two horses tandem. For a distance, those carts are probably better than our lumber-waggons: but for a few rods, it is an expensive practice.

B. I suppose carts are very common there. The Englishman I have working for me was wishing a short time since, when I was drawing out some manure, that we had some English carts. He said we could do it in half the time.

A. For drawing manure, and a few other purposes, carts are doubtless better than wagons; but before we can use carts to advantage, we must have a heavier breed of farm horses, for a light horse cuts a sorry figure in the thills of a large cart.

First Efforts at Farming—My First Crop of Corn.—I became a subscriber to the *Genesee Farmer* about eight years ago, and from that time read with increasing interest each successive number, until a strong desire to engage in practical farming was gratified in the purchase of a small farm situated two and a half miles south of the village of Middleport, Niagara Co. I moved my family and effects to the premises in April last, (1852,) and prepared to commence the practice of farming, as a student, of course, and a boss from necessity. My help consisted of a son about sixteen years of age, and a hired man who was as green as the island he came from.

The neighbors and experienced farmers of my acquaintance, as might have been expected, looked upon the success of such an attempt at farming, under such circumstances, as extremely doubtful. And I confess I was haunted by misgivings as to my ability to conduct the multifarious operations necessary to a favorable result. But having joined issue I determined to prosecute the trial to judgment. Entirely destitute of practical experience, my dependence rested upon what theoretical knowledge I had gleaned from the pages of the *Farmer*, the *Cultivrtor*, and a few other agricultural publications. It will readily be seen, therefore, that with whatever success my effort may have been attended, the credit is justly due to that hackneyed phrase, "book farming." I had carefully preserved all the numbers of the *Farmer*, and the *Cultivator*, and had them bound in separate volumes, constituting a fund of invaluable informataion from which I might be enabled to draw instruction, whenever embarrassed, (as I often have been,) in conducting the intricate and ever-varying operations of the farm.

Thus circumstanced, I commenced my operations upon a field of three acres, which had been seeded with clover and mown the previous year. The soil is a loam mixed slightly with clay, which had been much exhausted by excessive cropping. Upon this I spread twenty two-horse wagon loads of raw yard manure to the acre. I then proposed to invert the surface by the use of a three-horse power attached to one of Van Brocklin's No. 10 Plows (which, by the way, I think is a very efficient instrument). But here were difficulties which had to be met and overcome—adjusting the power in the proper manner, guaging the plow to the desired width and depth of furrow, placing the wheel and attaching the coulter at its place and requisite angle. In experienced hands these are trifles; but to a novice, somewhat formidable. However, after some little vexatious delay, I was enabled to put my power and apparatus in motion, and made a cut through the field about twelve inches wide by eight deep, and, after a few rather unsteady revolutions, I got the power and machinery so well under control, that in the course of about three days I succeeded in inverting the surface of the whole field nearly to my satisfaction. I then made free use of the roller and drag, until the ground was in a suitable condition to receive the seed. Next, with horses and wagon, I cleared the surface stone—an operation indispensable if a corn cultivator is to be used in tilling the crop. The field was then furrowed three and a half feet apart, with a corn plow, and marked at right angles three feet distant. The barnyard was then scraped and a shovelful of its contents deposited at the angles of marks and furrows. Next, my vault of night-soil was emptied and thoroughly incorporated with four times its bulk of dry dust from the middle of the highway, and well-rotted chips. This dust is a grand absorbent and a good deodorizer, and being so finely pulverized is in first rate condition for the use of plants; it should be secured in a dry time and at the middle of the day. A half shovelful of this compost was deposited in the same manner and adjoining the yard scrapings. The aviary was then cleared of domestic guano and composted in the same manner as the night soil, and a half shovelful deposited at the angle adjoining. And lastly, the pig-pen contribution was turned over and an equal quantity of surface loam and rotten chips added, and a shovelful deposited at each angle adjoining the domestic guano compost.

Twelve-row Dutton corn was planted from 17th to 31st of May, care being taken to move the manure in the center so as to drop the kernels to the soil, and then both corn and manure well covered with mellow earth. I would here observe that it took at the rate of twelve two-horse wagon loads to the acre, where a whole shovelful was deposited at each angle as above stated. Being ignorant of the quantity required to treat each hill in this manner, I fell short and was enabled to prepare only two of the three acres in this way, the third acre receiving only the raw manure turned under.

As soon as the rows could be fairly seen, Ruggles, Nourse & Mason's most excellent corn cultivator was run twice in a row both ways, which operation was repeated at the first and second hoeing, at both of which the corn was slightly hilled. No further attention was given until cut, drawn off, and stocked—the 13th of September. While growing, no perceptible difference was manifest upon the two acres manured in the hill with the various kinds mentioned. In the early part of the sea-

son, the third acre, treated only with raw manure, looked poorly. For fear of a failure, I planted white beans in each alternate row, but later it came forward, and at husking gave 80 bush. of ears and 5 bush. of white beans. The two acres gave a trifle over 320 bush., or at the rate of 80 bush. of shelled corn to the acre. Now I do not claim that this is an astonishing yield, but to me it is quite satisfactory, and the operation has demonstrated to my mind the following facts:

1. That yard scrapings is a good manure for corn.

2. That either night soil or domestic guano, as compared with yard scrapings or cattle manure, bulk for bulk, is worth, for a like purpose, eight times as much; and that hog manure, compared as above, is worth at least twice as much. And

3. Two facts made manifest, although personal, perhaps, in some measure, I will venture to mention. I have found that the yield of my neighbors' corn has not exceeded my own; and that a little knowledge of farming gained from books is not wholly useless. GEORGE W. GAGE.—*Middleport, N. Y.*

MEXICAN POTATOES.—The Mexican wild potatoes, which have been cultivated by Mr. A. HALE, of Alloway, and first offered for sale last spring, have done extremely well in this region. Most of them were planted on light soil, without manure, but have yielded very abundantly and maintained that pearly whiteness and mealiness which make them so desirable. I do not know of a single farmer who does not intend to plant double or three-fold the amount planted last year. I have seen only one lot where they were manured in the hill, and they did not have quite as smooth skin as those planted without manure, but have exhibited no signs of rot. Mr. HOFFMAN, who lives a few miles south of this village, planted one bushel and a half, and dug fifty-seven bushels; Mr. GEER planted one bushel, and gathered thirty-seven; two other gentlemen planted *two* bushels, and dug over *one hundred;* Mr. BRAYDEN gathered thirty bushels from one-half bushel planted. As near as I can ascertain, they have averaged fifty bushels for every one planted. When properly cooked, they resemble, in flavor and appearance, the White Carter potato, as I used to find it in the mountains of N. E. fifteen years ago.

The four potatoes originally planted by Mr. HALE, were about the size and length of a man's thumb; now many of them are six or seven inches long and about the same in circumference. Should they do as well in other localities as they have done here, this variety will prove a valuable acquisition to our vegetable stock. They have the smallest vines of any potato I have ever seen.

A paper was read before the Academy of Science, in Paris, France, on the 3d of May, by M. DECANDOLLE, describing a new potato which some farmers of Ain had procured from Mexico, and had cultivated for two years. The exterior resembled Mr. HALE's Mexican, but the inside was "intensely yellow." They were found to have an excellent flavor, and had not rotted. SYLVESTER. —*Lyons, N. Y.*

GOOD HOGS.—I wish you would give us more information in relation to the best breeds of hogs. This is a branch of the farmer's business that might be made to pay well, but it is at present too much neglected.

I have for several years kept a breeding sow. In March, 1852, she had a litter of eleven pigs, ten of which were sold, when six weeks old, to ten different individuals, all mechanics. The average age of these hogs when butchered, was *eight months*; their aggregate weight was 3797 lbs., or 345 lbs. each. The largest weighed 403 lbs.; the smallest, 300 lbs. I have looked in vain to find some statement in the papers to match this, but have not yet found any. I would now say, farmers beat this. G. W. GILBERT.—*Plymouth Hollow, Ct.*

As you gave in the last *Farmer* an engraving of some beautiful hogs, I must tell you of some pigs in my neighborhood. Mr. WILLIAM STEBBINS has a sow that had a litter of ten pigs on the 20th of last April. One was butchered when about six months old, and weighed when dressed 170 lbs.; two were killed when 7 months and 9 days old, and weighed when dressed 389 lbs.; one, 8 months old, weighed 258 lbs.; six, butchered Dec. 29th, when 8 months and 9 days old, weighed, when dressed, respectively 260, 258, 248, 244, 215, and 209 lbs. I cannot tell what breed the above pigs were, but the sow has a small mixture of *grass* breed. The pigs were fed no grain until the 1st of October. They were fed principally on milk, and some of them did not have enough of that through August and September. J. RANDALL.—*Masonville, Del. Co., N. Y.*

Potato Disease.—Last year we determined to do our utmost to produce a crop of sound potatoes. On examining the *Farmer*, we fixed upon Prof. Fessenden's plan as our mode. The position and quality of the ground was not what we desired; the soil was quite heavy, clay preponderating, with a considerable southern inclination; land much worn. On the 8th of May we plowed and harrowed it three or four times. We made the furrows for rows thirty inches apart. In six of these, we put a shovelful of rotten barnyard manure in each hill, about thirty inches apart; the balance of the manure was put on top of the hills as soon as planted. We planted a little over a bushel of seed on an eighth of an acre. In each hill we put a tea-spoonful of the composition recommended by the Professor, except of ashes. We took the quantity suggested by you—200 bushels to the acre. A heavy shower washed away about one-fifth of them, which we gathered and re-planted. Of sixteen rows, about two were wanting. We plowed, hoed, and kept them clean. Sometime in August the potato-bug came, and we (six in number) spent two half days in stamping and crushing them. About the 1st of September a part, that were then growing vigorously, all at once looked as if the frost had hurt them. My wife feared the rot was the cause, but I had so much confidence in the mode prescribed by the Professor, I could not believe the rot could effect them. However, a few days more and one-fourth were found affected. We dug them, fed the affected ones to the hogs, and eat away as hard as we could. We now have but a few bushels left of about thirty-five. The yield was about 260 bushels to the acre,—quite good. I do not believe any remedy can be found for the evil. New sandy land with a northern inclination, seems best adapted; but I have recently found three cases on which the rot, even on such localities, did injury. Sound seed, land strongly silicious, in a dry situation, and new or fresh, with early planting and digging, seems to be the best we can do.

We had much trouble in this section to raise corn. The last winter was so severe that it killed the vitality of the germ. The first part of the season was too wet, and about earing time, too dry; yet the crop was middling, and in the river bottom, good. From six acres we raised about 200 bu., but we had everything adverse to contend with. Never did so much work for the same quantity of corn. The wheat was much hurt, while in the milky state, by the red insect. For this, I fear no preventive can ever be found. Abraham Baer.—*West Carlisle, Cosh. Co., Ohio,*

Large Pig of his Age.—At the request of my friends, I offer the following for publication in your valuable paper:

This pig was one of a litter farrowed on the 10th of last March, and killed on the last day of the year, making him nine months and twenty-one days old. His weight was 432 lbs., exclusive of 18 lbs. of lard taken from the intestines; which shows, in pork and lard, an average of over 1½ lbs. per day. His food has been a mixture of corn, barley, buckwheat meal, (unfermented,) with sour milk. I still keep the mother of our *hero* as a brood animal, being now in the prime of life—being five years old the past autumn. She has had ninety pigs, at eight litters. She is a grade Berkshire, of small bone. R. R. Collins.—*Morris, Otsego Co., N. Y.*

Celery.—Two years since I cultivated my celery with home made superphosphate of lime, and the flavor was much improved, though not growing as large as I could wish. This year I cultivated it with gein liquor, (swamp muck and ashes soaked in water—See Dr. Dana's muck manure,) and have succeeded better than ever before. The celery has over two feet of branch, is stocky, and of the most delicate flavor. Let those who love this luxury try gein, and I think they will not raise any more manure-flavored celery. Sylvester.—*Lyons, N. Y.*

Vegetable Poison.—I sent you a remedy for vegetable poison, some months ago, which was considered very excellent. I have discovered another, which is exceedingly valuable and ought to be universally known; it is simply the frequent application of Sweet or Olive oil. It has been of very great service to me for a few months past. Ethan S. Fox.—*Athens, N. Y.*

A Cure for Scratches on Horses.—Take white or red lead, mix it with oil, and rub it a few times on the part diseased, and a cure will be effected. The scurf should be washed off clean every day with warm soap suds, and the lead thoroughly rubbed in. A couple of spoonfuls of sulphur given to the horse twice a week, will be of service to him. I have found this to cure when everything else failed. W. H. Chatterton.—*Beekmantown, N. Y.*

THE MATCHLESS COW.—Believing, for a year past, that I have a cow possessing extraordinary qualities for milk, butter, and stock, I resolved on giving a short history of her productions: The cow is of the native stock, large, perfect in form, and is seven years old. On the 23d of March she cast a pair of calves, male and female; they had all the milk of the cow for three months, except what was wanted in the family. From that time to the present, (January 10th,) we have made 280 lbs. of butter, besides supplying a family of four persons with buttermilk and cream, of which no account has been kept. We make from seven to nine pounds per week at this time, besides supplying the family. The cow has had no other food but good pasture and hay. She gave, in the leafy month of June, from 65 to 70 lbs. of milk per day for several days in succession, from which were made 3¼ lbs. of butter per day. This is the cow that produced the famous native steer, weighing, when just two years old, 1865 lbs. The twins are large and fine, and will weigh 1150 lbs. If any one can beat this, I should like to hear from them. S. N. FRANKLIN.

HEAVY OATS.—This day I was shown oats, of which two bushels, fair measure, weighed *ninety-nine pounds*. Can any Genesee Valley farmers produce oats that will beat this? N. NORTH.—*Ancaster, C. W.*

THE STRUCTURAL FORMATION OF VARIOUS BREEDS OF CATTLE.

(CONDENSED FROM THE NORTH BRITISH AGRICULTURIST.)

THE AYRSHIRE BREED.—The milk-producing breeds of cattle are more widely diffused than the flesh-producing ones. Much of the soil in this country (Scotland) is naturally so inferior, or is kept in such poor condition, that the herbage is inadequate to sustain, profitably, the fat-secreting breeds; hence those breeds which yield a return in the form of butter and cheese, are preferred to those which require richer pastures. Among the many valuable breeds for the dairy, the Ayrshire takes a prominent place; and, as a milk-producing breed, is inferior only to the Alderney. By some it is considered equal—by most dairy farmers in Scotland even superior. When the butyraceous deposit is stopped by the cows becoming dry, they are easily fattened. Oxen of the Ayrshire breed, when well fed in youth, grow to good weights at two and a half to three years old. If crossed with the Short-horn, they are valuable animals for the grazier. The Ayrshire breed, for these qualities, is therefore more widely spread over the country than any other.

The origin of this valuable breed can not now be traced. It would appear to be the result of a cross of the West Highland with some less hardy breed. This breed has, we believe, within these few years, slightly deteriorated, having become more delicate in constitution. This is not willingly admitted by breeders, but we think there is no doubt of the fact. Probably this delicacy of constitution can be traced to the change of form produced by breeding in-and-in, as many of the most esteemed herds have a close affinity with one another, and many breeders never introduce a change into their stock. The breeding of them simply for their milk-secreting qualities has produced a smaller animal, with a somewhat contracted chest, and enlarged pelvis. The bull is selected more from being the calf of a good milker than from symmetry of form, or pedigree—indeed, the last appears to be little regarded. The quey calves of the best milkers are also reared to supply the place of their dams; hence the milk-secreting powers are propagated more by hereditary qualities, than either by selection of animals from particular herds, or the selecting of animals of a peculiar formation. There are, however, certain forms indicative of certain qualities, which are so far a guide in judging of such milk-producing breeds as the Ayrshire; and these should be more carefully studied by breeders in general.

Lately a gentleman named FRANCOIS GUENON, a Frenchman, professed to have found by close observation that certain distinguishing marks were unfailing signs of quantity, quality of milk, and the period a cow would retain her milk-giving qualities after calving. The subject was taken up by several agricultural societies in France, and opinions pronounced highly favorable to the theory. We can not, without a series of cuts, explain the distinguishing marks; but they are such as are commonly observed by those who come in close contact with dairy stock. We have seen both keepers of cows, as well as dairymaids, point out nearly the same signs which M. GUENON has done, in judging the milk-giving qualities of an animal with which they were not familiar.

We will, in proceeding to describe the most prominent features of the best kind of cattle

for producing milk, confine ourselves to the Ayrshire, as these are the only breed in Scotland that are reared principally for their power of secreting the lactic fluid. The particular points in the structural formation can be understood by those having a knowledge of stock, without giving cuts. To those who do not understand stock, we refer them to the cuts previously given in describing the Short-horns. (See January number, pp. 18, 20.)

The head of both male and female should be small, rather long, and tapering toward the muzzle, which should be *darker* than the color of the skin. The eye large, lively, but not too prominent. In both bull and cow the jaw-bone should be strong, and open behind, to admit of the throat being fully developed where it passes from the head into the neck. The horns should be small, clean, crooked, and placed at considerable distance from one another at the setting on. The ears rather large, and orange tipped in the inside. The neck long, slender, tapering towards the head, and having the appearance of hollowness; the skin and throat loosely attached to the lower part of the neck. The point of the wither or shoulder should be thin. The shoulder blades should be close above, with a very slight covering of muscle. They should be developed outwards to the point of the shoulders, and should appear to the eye as detached from the structure of the chest. The chest, fore quarters, and neck should be light. The hind quarters large, and somewhat heavy. The back should be straight, gradually widening from the point of the shoulders toward the hook bones. These should be wide, raised at the points, and presenting a somewhat scraggy look. The ribs toward the pelvis should be wide and circular. These, with the joints, should appear open. The carcass should gradually deepen towards the hind quarters, and these should be deep. The length of quarters should exceed the breadth between the hocks. Dairy stock can scarcely be too long in the quarters. The quarters with the pelvis should be roomy—the buttocks should be square, and somewhat fleshy—the distance between the top of the tail and the hock joints should be extreme. The hock joints should be broad, as well as the legs above and beneath these joints. The legs should be short, somewhat delicately formed at the joints as well as at the fetlocks, and the animal should appear short-legged. The feet should be round, somewhat large, and strong. The tail should be set on rather at a curve than at right angles. It should be long, tapering towards the point, and the quantity of hair at the point should be moderate. The form of the milk vessel is of paramount importance. It can scarcely be too capacious. It should be placed well forward on the belly, and appear behind the line of the thighs. It should have a somewhat square form, but not low, heavy, nor loose, nor fleshy. The color of the udder is by some also deemed of great importance. It should be rather white than brown, except the color of the skin be wholly brown or black. The milk veins should be large and prominent. The teats should be placed wide apart, rather small, and pointing outwards. Next in importance to the form of the udder, is the touch. The skin should be thin, having the soft feel of a fine kid glove. The hair should be soft, and somewhat woolly. The color should be distinct; dark red, or approaching to black, are both fashionable. The colors, if two, should be arranged in blots or small patches; light fawns are not uncommon, but are not deemed hardy; some are beautifully spotted with red on a white ground. The very light colors approaching to white are objectionable. A dash of the Alderney, as well as of the West Highlander, can sometimes be discerned, particularly in the color of the best Ayrshires; but the breed as a whole presents a characteristic distinctness of colors as well as of form. The form wants that symmetry which distinguishes the Short-horn, being more lengthy and less proportional. They are, as a breed, constitutionally much more restless and excitable than the Short-horn, approaching more to the West Highlander. The eye, although lively, should be expressive of quietness and placidity of temper; an irritability of temper being a not uncommon defect in the Ayrshire; the bulls in some districts becoming dangerous. This defect is believed by some to be confined to particular localities, and connected in some degree with the soil. The animal, when walking, should have a gay and somewhat jaunty appearance, and present all the signs of a healthy constitution. This latter point has been too much overlooked in judging of Ayrshire stock. The animals are what is termed drawn too fine; hence the great tendency to chest diseases in this breed.

It is perhaps unnecessary to arrange the different points as we did in the case of the Short-horns. Pedigree is, as we previously stated, little attended to in this breed. The bull, if in fair condition, should have an equal covering of fatty flesh all over the body, every part of it being clothed as it were with flesh. The skin soft, with the hair silky to the touch; and although he should be less feminine in appearance than a cow, he should not be too masculine looking. The muscles of both sexes, particularly the female, should be somewhat slender. These will be best observed along the neck.

The young of both sexes should be judged of in the same manner as the matured animals. In the heifer, the udder should be somewhat prominently developed; the skin of it being loose behind, and showing a capability of stretching.

The system followed in rearing Ayrshires is rather to stint them in growth when young, pinching them in food, and exposing them to inclement weather. They are, therefore, small in size, and the skin, from the old hair remaining till a late period of the season, has generally a furry, mossy appearance, up till the middle of summer.

In judging of dairy stock, the first point is unquestionably the form of the udder; the second, the touch; the third, the upper pointing of the hooks; the fourth, the length of

AYRSHIRE BULL "DUNDEE II."

THE PROPERTY OF E. P. PRENTICE MOUNT HOPE. WINNER OF THE FIRST PRIZE, AS A ONE YEAR OLD AT ROCHESTER, 1851.

quarters; the fifth, roominess of the pelvis; the sixth, arching of the short ribs. The eye, size of jaw-bone, the form of neck, color, &c., following the other points in somewhat the same order as in the Short-horn. The medium size is usually preferred. The breed, as a whole, is diminished in size, from the system of rearing to which we have previously alluded. Full feeding the stock when young is known to injure their milk-secreting qualities, and is therefore generally carefully avoided.

Horticultural Department.

CONDUCTED BY P. BARRY.

TREE PLANTERS AND NURSERYMEN.

THERE is one point about nursery trees, that gives rise occasionally to considerable discussion between the buyers and sellers, and it has occurred to us that it might be well to offer a few remarks on it at this time. We allude to the dissatisfaction and disappointment that purchasers experience on receiving from the nursery trees of a somewhat crooked or irregular growth, or of smaller size than they had expected. We are very well aware that it is not a little aggravating to receive trees of four feet in height, instead of six or eight, as expected; or to get them with stems curved and twisted in half a dozen different ways, instead of being as straight as a gun barrel. To the amateur who intends to make but a small plantation, and desires every tree to be a model, this is particularly provoking; and in his trouble, unless he be as patient as Job, he reproaches the poor nurseryman most severely. Now we are not about to plead the case of the nurserymen; they must take care of themselves. They are, we know very well, often much to blame, and deserve reproach; but they are not unfrequently censured without good reason; and if those who purchase trees would study beforehand the characters of the varieties selected, as to growth, they would not so often be disappointed.

Now we will suppose, for instance, that Mr. A. orders from his nurseryman a dozen apple trees, as follows: *Early Joe*, *Summer Rose*, *American Summer Pearmain*, *Fall Pippin*, *Gravenstein*, *Porter*, *Baldwin*, *Fameuse*, *Northern Spy*, *Newtown Pippin*, *Melon*, and *Red Canada*; and that these trees are to be, we will say, three years old from the bud or graft. We would find that the *Gravenstein*, *Baldwin*, *Fall Pippin*, *Fameuse*, and *Northern Spy*, which are strong, rapid growers, are large, thrifty, beautiful trees; while the others, which are remarkably slow growers, are not more than half as large, and will be pronounced small, scrubby, stunted things, not fit to be seen, much less planted. A *Baldwin*, *Gravenstein*, or *Northern Spy*, will be larger in the same soil and under the same culture, in three years than a *Red Canada* or a *Newtown Pippin* in five: and at any size, their stout shoots, straight trunk, and smooth clean bark, are pleasing to the eye; while the slender, twiggy, rough-barked trees, are just the reverse. These considerations should be taken into account. The nurseryman is paid no more for the slow growers than he is for the rapid growers, and it is not reasonable to expect them so large or so vigorous looking. Then there are varieties, such as the *R. I. Greening* and *Fall Pippin*, of irregular growth, with very seldom a straight stem, that it is quite unreasonable to expect as symmetrical as a *Baldwin* or a *Northern Spy*.

If we turn to pears, we find these remarks equally applicable. If Mr. A. will order from his nurseryman the *Bartlett*, *Seckel*, *Buffam*, *Duchess d'Angouleme*, *Marie Louise*, and *Winter Nelis*, he will find a marked and perhaps to him a very disagreeable contrast in their size and form. The *Buffam* and *Duchess* may be eight feet high, thrifty, and smmoth as young willows; the *Bartlett* not over five feet, and the *Seckel* four; while the *Marie Louise* and *Winter Nelis* will not only be small, but twisted into the most fantastic and untree-like shapes. Looking at the *Buffam* and the *Duchess*, he will at once say, "Now these are what I call trees—just what I wanted; but these," turning to poor *Marie Louise* and *Winter Nelis*, "these are horrible." The nurseryman, who perhaps searched up and down every row in his nursery to get the straightest and best ones to please Mr. A., who is very nice, is sure to get not less than two pages of a

scold; and not only that, he must lose a part of his bill and ever after the trade of one whom he hoped would be a good customer.

Turn again to cherries, and we find the same sources of disappointment. Mr. A. wants half a dozen cherry trees — tall, handsome, well-shaped trees, of uniform size and shape; as he intends them for ornament as well as fruit. Well, he orders *Black Tartarian, Yellow Spanish, Napoleon Bigarreau, May Duke, Belle de Choisy,* and *Belle Magnifique* — all first rate cherries; but unfortunately, when they are received, the *Belle de Choisy* and *Magnifique* are mere dwarfs beside the majestic *Black Tartarians* and *Napoleons.* He then regrets he ordered them, and blames the nurseryman for not knowing better than to send them.

So with plums. No one need expect to get *Green Gages* and *Jeffersons* of uniform size with *Imperial Gages, Smith's Orleans,* or *Magnum Bonums.* If they do, they will generally be disappointed.

Those who regard the size and shape of their trees as of the *first* importance, must not be very tenacious about varieties; and, on the contrary, those who place *quality* first, must be less difficult to please as to size and form. The reasons are obvious. There are certain requisites, however, which purchasers have a right to demand from the nurseryman under all circumstances. These are — 1st, That trees be sound and thrifty, stout in proportion to their height, and supplied with an abundance of healthy, unmutilated roots. 2d, That the varieties be genuiue. 3d, That they be packed and prepared for transportation with the greatest possible care and skill. The purchaser who fixes his mind upon mere *size,* forgetful of these, stands in his own light; and will, if he lives long enough, find out his mistake.

Would it not be well for nurserymen to indicate, or arrange in separate classes, slow growers and those of a very irregular or crooked growth?

We throw out these hints for the purpose of drawing attention to a matter that, as long as we can remember, has been productive of disappointment and no little unpleasant feeling that might just as well be avoided.

CULTURE OF FOREIGN GRAPES IN COLD VINERIES.*

BY H. L. SUYDAM, GENEVA, N. Y.

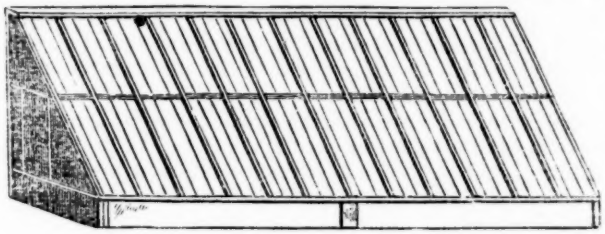
[We commend the following article to the special attention of amateurs, as the plain, straight forward statement of an amateur cultivator who has been eminently successful in this branch of culture. We know Mr. Suydam well, and can vouch for the honesty and accuracy of all he has said in regard to his management or its results. It will be remembered that at our State shows he has carried off the highest prizes even from professional growers. His grapes have always been remarkably well colored, excelling more particularly in this than any other point of merit. The material of the vine border accounts for this in a great measure. Instead of *dead carcasses, offal,* &c., Mr. Suydam has laid a thorough foundation of *bones, charcoal, shells, cinders,* and *well decomposed manure;* and these are the very materials to yield a healthy, firm, well ripened wood, and sound, well colored, and finely flavored grapes. We hope his success will, as he says, "induce others to try."—Ed.]

In compliance with the wishes of very many inquirers, I undertake to give to the public, through your columns, the plan of my vinery, and my mode of cultivating the foreign grape under glass. I will enter upon my duty, then, at once, by saying that I claim nothing new or original in my mode; I have taken some from one and some

* From the Geneva Courier.

from another of the very many writers on the grape; and as I have had very good success thus far, I shall feel it a great pleasure if I may but make this statement so simple as to induce others to try the same for themselves.

My vinery has a free open exposure to the south, being what is called a "lean-to" house, built against the south side of my barn.* It is thirty feet long, twelve feet high on the back wall and one foot in front, an eight-inch timber resting on three brick piers in front for the rafters to rest upon, and fourteen feet wide. The ends are of 1¼-inch stuff matched, put together tight and double, and filled in with tan bark, to keep the house as warm as possible. The door may be in either end, there being no fire used. The sashes are in two lengths, the upper ones to slide easily over the bottom ones, so that the house may be easily aired at any time, and made according to DOWNING. (*Fruits and Fruit Trees of America, p.* 226.)



A LEAN-TO COLD VINERY. SCALE ONE INCH TO TEN FEET.

I have a hogshead sunk in one corner of the house, to catch the water from my barn, with a small force pump and hose attached, with which I can sprinkle the house thoroughly in a very short time; for it is of the utmost importance to keep the house moist during the growing season.

The border extends over the whole of the inside of the house, and runs twelve feet outside in front; being thirty feet by twenty-six, and two feet eight inches deep. The dirt is first removed to the depth of two feet eight inches; then filled up eight inches with broken bricks, stones, and lime rubbish, so as to form a thorough drain, (for the roots of the vine delight in a warm, rich, open soil, not too moist;) the soil is then filled in two feet eight inches, to allow for settling.

In the border I am very particular. I have in my border fifty bushels of whole bones, in which there are fifty beeve and sheep sculls; fifty bushels of pulverized charcoal; twenty-five bushels oyster shells; a quantity of leather scrapings; twenty-five bushels of coal and leached ashes; twelve bushels of blacksmith cinders and iron filings; twelve loads of well decomposed manure; and the rest is made up of street scrapings, garden soil, yellow loam, and sod from an old pasture; no dead carcasses being used. The whole is well mixed together, and filled in on the last of March; and the vines are then planted on the *inside* of the house, eight inches from the wall, one under each rafter, which will make the vines about three feet apart. The object is to make the border as loose, open, and rich as possible. Avoid all walking on the border after the vines are planted.

I have ten vines in front and eight on the back wall, of the following varieties, procured of PARSONS & Co., Flushing, L. I.: four *White Muscat of Alexandria*, one *Royal Muscadine*, one *Palestine*, one *Gray Tokay*, one *Black Prince*, one *Black St. Peters*, one *Zinfindal*, one *Red Frontignan*, one *Wilmot's New Black Hamburgh*, six *Black Hamburgh*.

I plant the vines about the first of April, taking care to spread out the roots, that they may have a free start and not get entangled; rub off all the buds except the strongest one at the bottom. Water the vines freely, if the weather is warm, and keep up a humid atmosphere all the time. Never allow the vines to receive a check

* We add a sketch of "a lean-to vinery" of the proportions and style described by Mr. SUYDAM, in order to make the subject better understood.—ED.

after having once started. If it should get too warm, open the house a little at noon, but never let the house be open after four o'clock. If you only leave one bud on the vine, you must take great care of it, as it will rub off very easy, and then your vine is gone. Water with soap suds every Monday — one pailful to a root — and on Friday with guano. Put two quarts of guano in a barrel of water, stir well, and apply at once.

About the 20th of April the buds will begin to push. Let the temperature be pretty high; it will do no harm. I often find my house as warm as 100°, 110°, and 120°, Fahrenheit; but 80° or 90°, with plenty of moisture, is the best. As the buds begin to push out, raise them to a wire trellis about twelve inches from the glass. If any of the other eyes push, rub them off. Give plenty of air in the middle of the day, sprinkle frequently, and keep up a moist atmosphere.

September 1st. Discontinue watering except with the suds. Pinch off the shoot, which by this time will be twelve or thirteen feet long.

December 15th. Cut off the vine about six feet from the bottom, wash it with mild soap suds, wrap with straw, and lay it down in front of the house. Sprinkle some rat destroyer about, cover the border inside and out with ten or twelve inches of manure to keep the frost from the roots, and the work is done for the season, except to examine the glass to see if it leaks, and open occasionally when the sun is too hot, and to see that the mice do not trouble the vines.

Second Year. — Open the house as the season advances, so as to air, and that the buds may not burst too soon. About the first of April, if the season is favorable, uncover the vines, and let them lie down until all the eyes have pushed an inch; raise them by degrees, that they may all swell alike; then fix them to the vine trellis. From the time the house is opened, sprinkle every day, except on damp, cold days, the same as last year.

May 1st. The eyes have now pushed a foot or more. They are now called spurs. Many of them will show fruit. Pinch off all the fruit except one or two, which may be retained to test the kind. Never let more than three clusters remain on the vine the first year of fruiting, and never but one cluster on a spur. Discontinue the syringing of the vine while the fruit is in blow, and keep the house more closed and warm. As soon as the fruit is formed, pinch off the end of each spur about an inch above the first leaf beyond the cluster, and all the other spurs three or four eyes from the vine. Do not allow the spurs to be closer together than eight inches; rub off all that are nearer. As the eyes burst and push out, continue to pinch of the shoot, always an inch above the next eye. This you will have to do six or eight times during the season, to every spur, to keep them in check, or "at home," as it is called, and that the light may strike the vines on the back wall, (which are not in fruit this season — not doing as well as the front vines, that receive the full force of the light and sun.)

When the fruit has attained the size of a pea, go through the vines with a pair of sharp pointed scissors, and thin out the fruit full one half, always taking the smallest berries; and from time to time go over the vines and thin out the fruit until it begins to color, after which time it will be of no use. This will be about the 5th of August. Up to this time you have watered regularly with the soap-suds and guano, and syringed the vines from one to three times a day, as the weather has admitted. As soon as the fruit begins to color, discontinue the watering, and keep a current of hot dry air passing through the house, that the wood may get thoroughly ripened and prepared to do its duty next season. And if the fruit should turn soft and feel cold, cut it off at once; your vine is overcropped, and if suffered to stay on, will destroy the crop for another season and very much weaken the vine.

About the 20th of June, sprinkle two pounds of the flour of sulphur at mid-day, when the house is hot and dry, that some of the dust may fall on the foliage. This

will prevent the mildew. Repeat the same about the 1st of August. By the 15th of August the *Chasselas* grape will be ready to cut. Keep the current of hot air passing through the house. Pinch off the upper end of the vine to stop the growth and throw the sap into the lower part of the vine, and swell the buds.

September 15th. *Black Hamburgh* are now ready to cut. Your *Black Prince* and *Frontignan* will hang on the vine until December, if you keep the house open and cool.

December 15th. Cut the vines back to within two feet of where you did last year, and all the spurs to within an eighth of an inch of the vine. Don't fear for your fruit next season; there will be plenty of buds push from the base of the spur. Wash the vines with a preparation of soap-suds and sulphur—four pounds of sulphur to two quarts of soap-suds, mixed to the consistency of cream; apply with a paint brush, and be sure to touch all the parts. Some add a little tobacco. Cover the vines with straw, and the border with manure, the same as last year.

THIRD YEAR.—As the season advances, open the house often when it is warm, to keep the vines back so that the buds will not push too soon. Better not uncover until the 10th of April, than have the buds push and then receive a check. When you do start them, water the house freely and keep up a moist atmosphere, and guard against a check. Uncover the borders, and replace with new or fresh manure from the barnyard, to warm the roots. Examine the drain, to see that all water is carried off readily; for much—yes, one-half of your success depends upon keeping the roots in a proper state; no stagnant water must on any account be allowed to remain at the bottom of the border. Let the vine remain down on the border the same as last year, until the buds have pushed one or two inches; then raise by degrees. Several eyes will push from the base of last year's spurs; rub off all but one, so that the spurs will be about six or eight inches apart on the vine. Always rub or pinch off the spur; never cut. Water regularly the same as last year. As the fruit shows itself, select six or eight of the finest looking clusters on each vine, and pinch off all the rest at once. Keep the house closed and still during the time the fruit is in blossom, and not touch the vine with water until the fruit has set. As soon as this is completed, pinch off the end of the spur one inch above the next eye from the fruit, and all the others, except the leading shoot at the top, which you of course tie up to a wire trellis.

June 1st, remove all the rough and loose manure from the border, and fork in the remainder. June 10th, mulch the border with tan bark, about two inches thick, to keep the roots in an equal temperature and prevent the sun from operating too powerfully upon them. Care should be taken that there be at no time a sudden change in the house; open by degrees, and close in the same manner. If the leaf turns yellow, examine the glass; there is probably a defective light of glass, which draws the sun and scorches the vines. If the glass is defective, wash it on the inside with a preparation of whiting and boiled oil and turpentine. Never syringe the vines when the sun shines upon them; get up the moisture by keeping the floor wet.

When you prune the old wood of a vine, (which may be done without detriment, or danger of its bleeding, any time after the 1st of July,) use a very sharp pruning knife, and make one smooth, straight cut. The leading ones must be stopped soon after they reach the top of the house; but leave two or three laterals, to keep the sap in motion, which are to be stopped at intervals of two or three days. Pinch off all tendrils, and keep the whole strength of the vine in as small a compass as possible; but never remove the leaves from the vine, or you will destroy the flavor of your fruit. If you require more light, spread out the spur and tie it to the trellis. There should be at least one leaf between the fruit and the sun. Be sure and give plenty of air and room to the clusters, that they may get perfectly ripe, or the flavor will be destroyed.

Black Hamburgh should be *black*, not red, as is frequently the case, from being kept too close and confined, and not open to the air, as they should be.

In selecting your fruit, care should be taken to have it equally distributed over the vines. This will add very much to the appearance of the house as the fruit progresses.

Tie all the spurs to the trellis as soon as the fruit has set, water regularly, sprinkle with sulphur the same as last year. When the fruit has attained the size of a small pea, commence to thin out, always taking the smallest berries. If you want large berries, you must thin out severely; take two out of five berries; the strength will enter those that are left, and cause these to grow beyond your expectations.

Then commence to shoulder or tie up the clusters, and spread them out so that the air will pass freely through the clusters, and ease the main stem. After the fruit begins to color, avoid all handling. If you touch the fruit, it will destroy its beauty, and cause it to rust. If it is necessary to handle it after this stage, use a glove.

Give the vinery plenty of air, plenty of heat, and plenty of moisture. Remember that large fruit and large clusters are the objects to be attained.

This is the manner in which I have treated my vines for the last three years, and never have had any trouble from rot, rust, insect, shriveling, or shrinking; and in seventeen months from the time the vines were planted, I took the second premium at the State Fair at Rochester; and this season the first premium at Utica, having raised nine clusters on each vine, and exhibited grapes the weight of which was as follows: *Black Hamburgh*, 2 lbs. 12 oz.; *Zinfindal*, 2 lbs. 14 oz.; *Black St. Peters*, 3 lbs. 2 oz.; and all were ripened by the 5th of September, although the season was backward and unfavorable.

What the vines will do another year, of course remains to be seen. I think, however, they are in good condition, the wood being well ripened; and with proper care, a good crop may be expected.

It will be seen that this statement is plain and to the point; and could I have had these notes to refer to when I commenced, they would have saved me a great deal of trouble. And I think that with these notes, and the help of DOWNING's work and a work on the grape published by J. F. ALLEN, Boston, Mass., any one may raise the foreign grape without any fear of failure. And certainly, to see the house well in fruit one season, will go a great way toward paying for what some would call trouble.

TRANSACTIONS OF THE NORTH-WESTERN FRUIT GROWERS' ASSOCIATION, at their second Annual Meeting, held at Dixon, Ill., Sept. 29 and 30, 1852.

IN order to place a proper estimate on the decisions of this meeting, we have looked over the list of delegates, or members, and find that out of the whole number, 63, there were from the State of Illinois *fifty-three*, from Iowa *six*, from Indiana *one*, from Ohio *one*, and from Wisconsin *two*. In the main, therefore, we must regard this as an Illinois association; and as there is at the present time a pretty general feeling in favor of the organization of State pomological Societies, we think it not at all unlikely that this will assume that character. It would probably be well that it should do so. The great State of Illinois, extending over five or six degrees of latitude, and containing some 60,000 square miles of territory, affords ample scope for the labors of such an Association. Ohio has already such an organization. Michigan, Indiana, Wisconsin, Iowa, and Kentucky will no doubt very soon see the necessity of it; as in all these States the more intelligent and improving classes of the population are turning their attention earnestly and energetically to fruit culture.

It is unnecessary for us to urge upon our western friends the advantages of such associations; for they show that they are fully sensible of them, in the formation of

State agricultural societies. Association is one of the most efficient means of collecting and concentrating the scattered and varied experience of individuals in every department of labor or study or research, and no pursuit that occupies the attention of men, so much needs it as that of fruit growing.

The Northwestern Association is to hold its next meeting in Chicago, Ill., on the first Tuesday in October, 1853. The officers for the ensuing year are—

JOHN A. KENNICOTT, *President.*
ROBERT AVERY, ARTHUR BRYANT, W. H. LOOMIS, *Vice Presidents.*
F. K. PHŒNIX, *Corresponding Secretary.*
SAMUEL EDWARDS, *Recording Secretary.*
ARTHUR BRYANT, *Treasurer.*

We shall now proceed to give a condensed sketch of the proceedings.

At the opening of the meeting a committee consisting of Dr. L. S. PENNINGTON, CYRUS BRYANT, C. R. OVERMAN, H. S. FINLEY, and A. R. WHITNEY, was appointed to recommend a list of fruits for discussion and for cultivation in the West, and reported the following:

EARLY APPLES.—Carolina Red June; Early Pennock; Keswick Codlin, for culinary purposes; Sweet June; Hocking, (local name.)

For limited cultivation.—Prince's Early Harvest; Sweet Bough; American Summer Pearmain.

AUTUMN APPLES *recommended for general cultivation.*—Rambo; Maiden's Blush, (market and culinary); Gravenstein; Snow; Porter.

Recommended for further trial in the West.—Autumn Strawberry; Monarch; Fall Pippin, best fruit, but bearing variable; Sweet Nonsuch, (local name); Red Gilliflower.

WINTER APPLES, *recommended for general cultivation.*—Yellow Bellflower; Rawles' Janet, in favorable localities; Willow Twig, prolific and profitable; Fallawater, (known as Mountain Pippin); White Winter Pearmain, Dominie; Winesap.

Recommended for limited cultivation.—Belmont; Talman Sweet, as a baking apple; Vandervere.

For further trial.—Detroit Red; Roxbury Russet; Ladies' Sweeting; Baldwin; Rhode Island Greening; Jonathan; Hubbardston Nonsuch; Swaar, (best fruit).

The *Carolina Red June*, after being discussed, was passed as "beautiful, hardy, productive, and best of its season." It was stated to be an early bearer, producing fruit at four years old in the nursery.

Sweet June.—"Very good, early, and productive."

Early Pennock.—Generally pronounced inferior in quality, but valuable on account of bearing early and most abundantly. Passed as "good, productive, and recommended for moderate cultivation for market."

Hocking.—Very large and productive. Passed as "*good.*" Said to resemble the *Rambour Franc*, but later, and has darker wood, and buds closer and more prominent.

Keswick Codlin.—"Good for limited cultivation for culinary purposes."

Early Harvest.—"'*Best*' in quality; poor bearer on young trees."

Sweet Bough.—Poor bearer.

American Summer Pearmain.—First rate in quality, good bearer, tree of slow growth.

Baldwin.—Not much known; poor bearer so far.

Rambo.—All agreed in calling it "best and most profitable of its season."

Snow, (Fameuse.)—"Very good; recommended for general cultivation at the north. Mr. ELLIOT, of Cleveland, said that after cultivating it seven years, he had none but poor specimens. We purchased some very fine specimens at Cleveland, in October, 1850, from a boy who was selling them on the steamboat wharf.

Maiden's Blush.—Good for culinary purposes, and recommended for general cultivation. Stated to be excellent for drying.

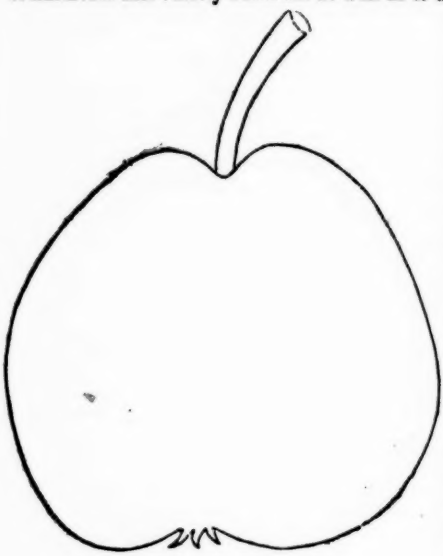
Gravenstein and *Porter.*—Not sufficiently known.

We shall go over the remainder of the list next month.

THE annual meeting of the Genesee Valley Horticultural Society will be held in Corinthian Hall, Law Library room, on the 5th of February. There will be an exhibition of winter fruits.

THE BLEEKERS MEADOW PEAR.

WHEREVER this variety succeeds as well as it does in Western New York, we can not but regard it as a useful and profitable orchard pear. The tree is remarkably hardy and vigorous, grows erect and rapidly, bearing enormous crops. The fruit, although at best only second rate for the table, is excellent for stewing; and with us retains its freshness, fine color, and flavor, all through the months of November and December. It is a native of Pennsylvania, and said to be a descendant of the *Seckel*. We would not recommend it for the garden; but for the orchard, where trees are to be treated with a very low culture, and neglected as to pruning, it is one of the best sorts we know of.



BLEEKER'S MEADOW PEAR.

Fruit—medium size; on old trees, rather small; roundish and regular. Skin—smooth, bright yellow, sprinkled with dark dots, and occasionally a reddish brown tint on the sunny side. Stalk—stiff, stout, about three-fourths of an inch long, slightly sunk. Calyx—open, basin shallow. Flesh—white, half melting, with a high musky flavor.

THE CURCULIO—A REMEDY.—I propose to introduce the reader to a new and distinct mode of warfare upon that mischievous insect, the curculio; all former warfare, so far as I know, having been predicated upon false opinions concerning its nature and habits. It comes out of the ground about the commencement of warm weather, when the plum tree is in blossom, or soon after. They are at this time about the size and have nearly the appearance of a common louse, are unable to fly, and invariably crawl up the tree during the fore part of the day, or at any time when sufficiently warm. Here they remain, mature, and do their destructive work before they are able to fly.

I am of the opinion that all the benefits arising from whitewash of lime, is owing to its caustic properties, in retarding their progress up the trunk of the tree, and destroying them when quite young and tender. I propose to make a ring of tar around the body of the tree, and by strict attention destroy them as they crawl up. Last spring (though too late) I killed in this manner upwards of six hundred on one tree. Gathered fallen plums every day, and destroyed them. I intend to give them special attention next season, and report progress. Let every one who owns a plum tree do likewise.

I am well satisfied that the curculio migrates slowly; that they increase in favorable situations (soils) with a rapidity proportionate to the amount of fruit within their range. That they are averse to using their wings, any one may soon convince himself by shaking them from the tree when full grown; in a short time they will be seen making their way up the trunk of the tree. By removing a tree to where no plums have ever been grown, a plentiful crop will be had for two or three years. The tar should be stirred and renewed every day. O. T. HOBBS.—*Randolph, Pa.*

Editor's Table.

TRANSACTIONS OF THE N. Y. STATE AGRICULTURAL SOCIETY.—We are indebted to B. P. JOHNSON, Esq., the able and courteous Secretary of the Society, for the eleventh volume of its Transactions. It contains about 1000 pages, and is filled with matter interesting and valuable to all engaged in the noble occupation of cultivating the soil, and is a work which no farmer can peruse without much benefit. It contains, as usual, the doings of the State Society, valuable reports from the several County Agricultural Societies, the detailed management of the premium farms, prize essays on superphosphate of lime and on the management of soils, essays on the potato disease and the Ayrshire breed of cattle, with other matters of interest. An appendix to the Transactions, of 193 pages, contains the Secretary's report of the Great Exhibition in London, and is a work of great value and general interest.

We have read the "general view and agricultural survey of the County of Madison" with pleasure and profit. It is a paper of much labor and merit. The labor and money expended on the thirty analyses of soils given in this essay, must alone have been considerable. When we know more of the actual requirements of plants, the form in which they take up their constituents, and the relative proportions in which the various crops require their available food to exist in the soil, &c., these analyses may be of great value. At present, with our limited knowledge, we have been able to obtain but little additional information from their study and comparison.

Professor COMSTOCK.—We have on hand several communications on *Professor Comstock's* WONDERFUL discoveries. In our next, we shall publish some of these, and *divulge* THE SECRET, so far as we have been able to learn it after patiently listening to the *Professor* for four or five hours. In the meantime we advise our readers, if they do not wish to be *humbugged*, to keep their *dollars* and let the Professor keep his *secret*.

CLUBS.—Additions to clubs can be made at any time, at the lowest club rates. Those who have ordered *five* can increase their clubs to *eight*, by forwarding One Dollar.

OUR *Ladies' Department*, which is unavoidably omitted, will be resumed in the next number, and continued, with illustrations.

THE HORTICULTURIST, AND JOURNAL OF RURAL ART AND RURAL TASTE.—The January number of of this journal has been one month before the public, and the press and the people are unanimous in its praise. In beauty it is not excelled by any journal in the country, and, in the opinion of our contemporaries, its matter equals its appearance. To this verdict we heartily assent. The February number is just issued.

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NEW YORK STATE AG. SOCIETY.—The annual meeting of this Society will be held at Albany on the second Wednesday (9th,) of February. The The exhibition of Fat Cattle, Grain, Seeds, Dairy products, &c, will be held at WOLFORD'S, Bull's Head, on the 8th, 9th, and 10th of February.—The exhibition of Fruits and Field crops, at the Society's rooms, old State House.

OUR friends ordering the *Farmer* will be particular in giving the name of the Post Office, County and State; also, in writing names plain, as by this much perplexity may be avoided to ourselves and subscribers.

TERMS—FIFTY CENTS a year for single copies; *five copies* for $2, being *forty cents each;* and *eight* copies for $3, being *thirty-seven cents each*, and any greater number at the same rate.

ADVERTISEMENTS, to secure insertion in the *Farmer*, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. We publish no other. Terms—$2.00 for every hundred words, each insertion, *paid in advance.*

Inquiries and Answers.

(JOHN SLITTENBAUGH, Leesburgh, Pa.) PLASTER ON WHEAT.—There is much difference of opinion on this subject; some think that plaster sown on wheat in the fall strengthens materially the young plant and enables it better to stand the winter. It is said, too, that plaster sown on wheat in the spring causes too luxuriant a growth of straw, to the damage of the crop, which is not the case when sown in the fall. Many good farmers prefer to sow it in the spring. Aside from practice, theory would indicate the fall as the best time for sowing plaster on wheat.

(James W. Gamble, Hillsboro, Ohio.) We like much your proposed plan of discussing with your neighbors the various articles of the *Farmer*. We should like to hear how far they accord with your experience, &c.

We do not know whether you can raise enough carrots from an acre to purchase twice the amount of corn the "Squire" can raise on an acre, with only one-third extra cost, but we do know, however, that you can raise a crop of carrots at much less cost of the valuable ingredients of the soil, than in raising a large crop of corn, from the fact that corn destroys ammonia during its growth while carrots do not.

Of the relative value of turnips, carrots, and beets, we have not experimental means of knowing; theory, however, indicates that 100 lbs. of hay are equal to 885 lbs. of turnips, 383 lbs. of carrots, and 669 lbs. of white Silesian beet.

Mr. G. wishes to know the best method of raising parsnips. Will some of our experienced cultivators give us their views.

(J. M. Crosier, Little Prairie, Wis.) Thorn Hedges.—Place your seed in a "rot pit," or in a hole in the ground; mix them with a little soil and let them lay there till the spring of 1854; then sow in drills, &c. They will not germinate the first year.

(Nathan Veatch, Bladensburg, Ohio.) • Works on Agricultural Chemistry.—There are several good works for you. *Norton's Elements* would perhaps please you best; it is plain and practical, and applies chemical principles to *American* agriculture. It should be in the hands of every farmer. *Johnston's Agricultural Chemistry* is a most valuable work; perhaps the most thorough we have on the subject. *Boussingault's Rural Economy* is *the best work* extant. It embodies the results of some thiry years laborious experimenting on a large farm devoted to this especial object, and is deserving of much more attention than it has hitherto received. *Liebig's Agricultural Chemistry* is an interesting and most popular work. It has perhaps done more good in calling the attention of chemists to agriculture, and agriculturists to the value of chemistry—in leading farmers to experiment in the field in conjunction with the chemist in his laboratory—than all other works on the subject.

Liquid Manure Tank.—Which is the best and cheapest means of catching liquid manure, in a vat or cistern? How large should it be to hold the liquid of 16 cows during winter, and what would it cost? Stephen Landon.—*Erie Center, Erie Co., N. Y.*

Will some of our readers be kind enough to answer the above.

Fatting Cattle.—I should like to hear, through the columns of the *Farmer*, the best mode of fatting cattle—how much exercise, if any?—what quantity of drink on dry feed, or on roots? Yourself, or some practical farmer, can give us some information respecting it. J. T. Robbins.—*Mayville, Chaut. Co., N. Y.*

In fatting animals, the less exercise permitted the better. Exercise is doubtless necessary to insure the *health* of all animals; but we must recollect that fatting is, in itself, an abnormal condition, that all animals, rapidly accumulating fat, are more or less diseased. The celebrated breeder, Bakewell, understood this fact, and was in the habit of turning his sheep into marshy meadows for the purpose of getting them diseased. In such a condition they matured earlier and laid on fat with surprising rapidity.

Salt is good for all animals, and probably is, in some form or other, necessary to *health;* but we know that salt is not good for fatting animals, and should never be given if the object be the accumulation of fat. Experiment agrees with theory on this point. We recollect when conducting some extensive experiments on sheep, a practical friend urged us to give them salt, assuring us that his sheep did much better with than without salt. The sheep on which we were experimenting were doing well at the time, averaging about 2 lbs. increase each per week. To please our friend, we gave the sheep salt, of which they partook freely, but in the fortnight during which they were allowed salt, *every sheep lost weight.* We would give them as much water as they would drink; if fed roots, they will require, and will drink less.

In fatting animals, perhaps, the most important point is to obtain such as are well calculated, from breed, disposition, and symmetry, to mature early and fatten rapidly; then keep them warm, (be careful they are not too warm and that they do not perspire) quiet, and clean. Feed them regularly and let their food be highly nitrogenous, with sufficient available non-nitrogenous matter united with the required bulk. See December number, page 334.

Sun Flower Seed.—Are sun flower seeds good for poultry? and at what times, and in what quantities, are they good for fattening in the coop? Would their use prove injurious in any way? J. W. N.—*Forest, Pa.*

HORTICULTURAL.

(H. S., Meredith, N. Y.) *Bush Alpine Strawberries* may be propagated by division of the plants, but the better way is to raise them from seed.

Walnuts may be profitably grown where saplings sell so well, and are likely to increase in

value, for hoop poles. The nuts should either be sown in the fall, or kept among earth all winter and sown in the spring. They should be put in good clean soil, and be as carefully attended, for the first year, as a hill of corn. They may be sown thickly in a seed-bed and afterwards transplanted, or at a foot apart and let them remain until ready for cutting.

(L. W. C., Marion, Oregon.) The lower tier of branches on dwarf or pyramidal pear trees should not, as a general thing, be more than a foot from the ground. They need shortening (the young wood) annually, not to keep them from growing too large, but to keep them vigorous and well supplied with fruit spurs on all parts. You should peruse the "*Fruit Garden*" on the cultivation and training of pears. We are glad to learn that fruit growing already occupies so much attention in Oregon.

(C. A., Paris, C. W.) The *Syrian* grape can be had at any of the nurseries where foreign grapes are cultivated.

The *Prince Albert* grape has not the reputation of being superior to the *Black Hamburgh*, and we believe is inferior in size and productiveness.

We are not aware of the *British Queen* strawberry being liable to change its sexual character.

The *Fabiana* is easily propagated from cuttings of the young wood; in light, sandy earth, covered with a bell-glass, they root more certainly and quickly.

HEDGES.—For a "thief-proof" hedge, in 44 deg. north latitude, we would choose the *Cockspur* native thorn, or any native thorn with sharp powerful spines, or the *Honey Locust*. The latter, if well managed at first to thicken it, makes an excellent hedge.

GENEVA TRIAL OF IMPLEMENTS.

Review of the recent Trials of Horse Powers and Threshing Machines, and the Report of the same, by the Committee of the New York State Agricultural Society, at Geneva and Utica, under whose supervision it was held.

If anything were wanting to prove the great superiority of the Endless Chain Horse Power, patented by Horace L. Emery, over all others of its class—or if to prove the superiority and utility of endless chain powers over all sweep powers—it has at length been furnished by the report of the committee of the State Ag. Society, on the trial of machinery at Geneva in July last.

The trial was one the largest ever had in this country, and probably in the world. It continued nearly two weeks, and was attended with a vast amount of labor and expense to all concerned, and seemingly every competitor returned to his home perfectly satisfied with the experiments to which their machines had been subjected.

Although the award for the best Horse Power was given the maker of the above Emery power, it is of not half the importance as is the report of the several severe tests to which all were subjected, as will be seen by reference to the report.

Among other things, it says of the Emery power:

"The platform rolls over reels, furnished with clutches so disposed that its action is nearly in a tangent to the circle, and therefore acts to the best advantage. This arrangement seems less liable to wear than any other, and the entire contrivance and perfection of the work, gives to it a marked superiority."

It may here be proper to state, on the authority of two of the committee, Mr. Howard and Mr. Holmes, (after publication of the report) "that in course of consultation upon the relative merits of the several other powers, it was considered in committee that this one had one-third advantage in utility, over the best of the others;" but it is nevertheless true that its relative utility was not over-estimated, as will hereinafter appear.

One of the first and simplest experiments tried with the several powers in this class, was to ascertain the relative amount of friction, or in other words how much force was absorbed in friction by the powers when not attached to any machinery, and running at the velocity required for practical purposes.

It was as follows: "Each Two-horse Power was placed at an angle of 13 deg., and two men placed upon the platform, and their gravity, (269 lbs.) allowed to move them as nearly as possible to the required velocity for threshing. As their weight was too great and the velocity too rapid, a spring balance or steelyards was attached to the frame work at the fore end, and held by the men on the platform —and by this means the motion was retarded sufficiently for the experiment. As the position of the steelyards was the same on each power, and in a horizontal position, it was reckoned that whatever the draft in retarding the motion might be, the steelyards must show it, as they did; and it was assumed that whatever of the propelling force derived from 269 lbs. must be shown upon the steelyards—or in other words, what was not upon the steelyards was absorbed. The result of this experiment was as follows, after getting up and maintaining a uniform velocity with each machine.

Emery's—Velocity of platform required for threshing, 169 feet per minute; velocity in experiment, 292 feet per minute; steelyards showed 27 lbs.; absorbed by friction, 35 lbs.

Badger's—Velocity of platform required for threshing, 222 feet per minute; velocity in experiment, 200 feet per minute; steelyards showed 11 lbs.; absorbed by friction, 51 lbs.

Westinghouse—Velocity of platform required for threshing 135 feet per minute; velocity in experiment, 152 feet per minute; steelyards showed 13 lbs.; absorbed by friction 49 lbs.

Thus showing, that while the Emery power did move nearly 75 per cent. faster than required, the friction was but 35 lbs.—while had it been more retarded, the friction would have been considerably reduced below even 35 lbs., or about 25 lbs.

Badger's power, which was awarded the 2d premium, absorbed 51 lbs. while running at about its requisite speed for threshing, or 46 per cent. more than Emery's power—and probably this difference would have been 75 or 100 per cent. had the velocity of Emery's been reduced to its usual rate.

This experiment was also applied to the One-horse Power, with the following results: with one man, weight 150 lbs., producing a power on platform of about 34 lbs.

Emery's power in experiment, 192 ft. per minute; 10 lbs. on steelyards; amount absorbed by friction, 24 lbs.

Badger's power in experiment, 146 ft. per minute; 4¾ lbs. on steelyards; amount absorbed by friction, 29¼ lbs.

Showing again, while Emery's power absorbed but 24 lbs. while moving about 14 per cent. too fast, the Badger power absorbed 29¼ lbs., about its regular velocity, or 24 per cent. more friction than Emery's.

These experiments, which were taken with the utmost care and precision, and repeatedly corroborated by others succeeding them, are wholly left out of the report, while others of less pointed results have been recorded.

One of which was to attach the same threshing cylinder alternately to each power, with the same band and by placing five men in the Two-horse Powers, to note the distance their weight would cause them to travel per minute, as also the number of revolutions of the cylinder produced in the same time. The weight of the five men was 714 lbs., producing a force of about 161 lbs.

Experiment with the Two-horse Powers.

Emery's distance travelled, per minute, 218 ft.; revolutions of cylinder, 1,996.

Badger's distance travelled, per minute, 300 ft.; revolutions of cylinder, 2,160.

Westinghouse's distance travelled, per minute, 130 ft.; revolutions of cylinder, 1,390.

As this experiment combines an attachment to machinery, and as the relative velocity of the cylinder to each foot, or the whole distance travelled, varies according to the

internal gearing of the powers themselves, it becomes necessary to take that difference into our calculations, which we find as follows: The cylinder when attached to Emery's power, revolves 9.15 times per each foot of platform—with Badger's, it revolves 7.15 to each foot—and Westinghouse's revolutions 10.67 times. Thus showing that Badger's power geared 27 per cent slower than Emery's, and 48 per cent. slower than Westinghouse's, and should produce results bearing a relative proportion of increase over them.

Emery's, therefore, as compared with Badger's should have produced but 1620 revolutions, but did 876 revolutions over that, thus showing Emery's to have exceeded Badger's by 23 per cent.—and Badger's to have equalled Westinghouse's, should have produced 2,061 revolutions, while he did more by about 9 per cent.

These minutes are copied from the report, but the deductions are not. They are themselves, self-evident, notwithstanding the report to the contrary, which reads:

"From the foregoing table, (alluding to velocities and distances) it is obvious Badger's power works with the least friction, or that gravity gives to his machine a greater amount of useful power than to either of the others on trial being 3 per cent. more than Emery's, and 55 per cent. more than Westinghouse's."

It further says:

"Badger's power is well made, and in this respect deserves much credit; yet in this excellence it is exceeded by Emery's."

"Badger's is a rack and pinion power, the legs being connected by strong iron links, and the rack though straight, is provided with teeth increasing in depth as they approach the exterior edges of the plates into which it is divided; and each plate is perforated in the center, to accommodate the convexity of the pinion while passing over it. This perforation weakens the pieces, and increase their liability to fracture. A rubbing action seems to be inevitable, causing rapid wear."

Justice to the Emery power in this last experiment requires the statement of the fact, that it was made at Utica some two months subsequent to the Geneva trial, and not with the understanding with the competitors, that it was to be made a part of the report; and while this power was transported from Geneva to Albany, and back to Utica by railroad, it became filled in all its gearings with coal and cinders from the locomotive, being on an open car. It became necessary to take its every part to pieces, and was cleaned as well as could be done under the circumstances—while both the others were different powers than used at Geneva—one being brought by wagon, with great care, to Utica, and the other in a box car by railroad. This is named to show the cause of the relative difference in the trials of friction at the two places. This fact was made known at the time to the committee, but it is not noticed by them.

The One-horse Powers, which were transported in tight cars, suffered no inconvenience from coal and dust, and the results were as follows:

Emery's, with two men, travelled 104 feet, and produced 950 revolutions per minute.

Badger's, with two men, travelled 87½ feet, and produced 630 revolutions per minute.

According to the gearing, as before, Badger's should have produced about 1,250 revolutions to have equalled Emery's—but came nearly 50 per cent. short of this standard.

Where has the report, as published, noticed this discrepancy in the One-horse Powers? No where. It simply gives the number of revolutions, without a comment. Is it such a report as the statistics justify, or is it not?

Another experiment was made with each set of powers connected with threshers as in use, and six men placed on the several platforms, weighing 925 lbs., and the velocity allowed to equalize the power or weight on the platform, and this velocity noted for one minute, as follows—(rather an ambiguous method of reporting, to say nothing of the errors):

Badger's power, 150 revolutions of wheel, 10 in. of platform to each revolution—197 ft. gaining perpendicular of 44.32 ft., for 232 lbs., while it should read—

Badger's power, 150 rev., 10 in. each for platform—125 ft., equal to raising 925 lbs. 28.11 ft. perpendicular besides its own friction.

Emery's power, 140 rev., 10¾ in. each for platform,—207 ft. equal to raising 925 lbs. 46.56 ft. perpendicular, besides its own friction.

Westinghouse's 256 rev., 7⅛ in. each for platform,—152 ft., equal to raising 925 lbs. 34.19 ft. perpendicular, besides its own friction.

If this shows anything, it is that the Emery power and thresher combined, runs much more easily than either of the others.

Another experiment was, to place two men upon the platforms of the Two-horse Powers without threshers or steelyards, and allow the velocity and power (232 lbs. on platform) to equalize each other, and note the distance travelled—with the following result:

"Badger's power 218 rev., 10 in. each,—286 ft. of platform, perpendicular elevation of 45.69 ft, for 52.25 lbs.

Supposing the 286 ft. to be correct, (which should be 190 ft.) the elevation would be 64.68 ft.—while it should read thus—

Name.	Number rev. of pulley.	Motion of platform to each rev.	Elevation 232 lbs. besides fric'n.	Distance motion of platform.
Emery,	430	10¾	83.91 ft.	371 ft.
Badger,	218	10	42.97	190
Westinghouse	336	7⅛	51.79	229

Thus showing conclusively the great difference in the friction of the powers themselves, as also with threshers attached, is in favor of the Emery power.

The next experiment is that of threshing grain with horses weighing 2,200 lbs., placed upon the several platforms, and a quantity of grain, 100 sheaves, weighed off to each competitor.

The travel of the horses, the time occupied, the weight of grain obtained, the velocity of the cylinders during the threshing of the grain, the number of men required, &c.

Name of maker.	Number of horses used.	Number of men employed.	Weight of sheaves threshed.	Weight of cleaned grain.	Time required in threshing.	Weight of horses used without harness.	Revolutions of Cylinder.
			lbs.	lbs.	m. s.	lbs.	
Emery,	2	5	840	169	10.30	2200	1550
Badger,	2	5	850	156	17.30	2200	1600
Westinghouse	2	5	954	200	13.30	2200	1450
Pitts, lever pow'r & self cleaner,	8	7	934	194	5.30	draft unk'n.	1350
Hall, lever power & self cleaner,	8	6	1000	192	8.00	do.	1650

From this table we obtained the following deductions, which will show the relative cost of threshing with the endless chain powers with great accuracy, as the experiment was tried with every circumstance alike with each, and in a manner where there was no possibility of favoriteism nor deception—as the whole work was done by the gravity alone, and each machine new, and horses not before used on any power.

Name of Power.	Distance travel'd by horses per min. in feet.	Ratio of gr'n to sheaves.	Lbs. of wheat threshed pr minute.	No. of lbs. at same rate for 10 hours.	No. of bus'ls for 10 hs. at 60 lbs per bushel.	Cost per bu. with 5 men & 2 horses.	Cost per bu. with 3 men & 2 hor's, at same rates.
Emery's,	160.28	.201	16.09	9654	160 54-60	$.0373	$.0248
Badger's,	222.22	.183	8.91	5346	89 6-60	.0637	.0446
Westinghouse,	135.68	.209	14.81	8886	148 6-60	.0405	.0270
Pitts' Lever Power and Cleaner,	.....	.207	35.27	21162	352 42-60	8 hors 7 men .0311	
Hall's do.,	.....	.192	24.00	14400	240	.0458	

From the above, it will be seen that the report charges each of the Endless Chain Horse Powers, with five men in attendance, while in no instance were more than three men engaged in these threshing experiments—and further, three men can as well manage either of them, as six or seven can the larger machines; while they are charged with only that number. With the endless chain, the necessity of a driver is avoided, as the feeder of the thresher not only attends his own team, but has the whole under his control, and can check or stop the whole instantly, by means of brakes and lever.

It is also observable that the yield is little better than half a crop, while it is mixed with much weeds and grass, requiring about the same power and labor as it would to produce results double what we have before us. As the ratio of wheat to straw bears a very uniform proportion, these experiments form good data from which to make the following deductions:

The Emery power required the team to travel but 1.9 miles per hour, and with the force of gravity alone, threshed of this grain at the rate of 161 bu. per day, of cleaned wheat at an actual cost, with the three men, of less than 2¼ cts. per bushel, which, cleaned from the fine chaff with fan mill, will add somewhat to that sum, making say three cents per bu. over boarding, and calculating the board of three men and two horses at 37½ cts. each per day, will cost 4 cts. and 1 6-10 mills per bushel, or in a good yield, about half that sum.

Badger's power requires over 2¼ miles travel of team per hour, and threshed but 89 bushels of cleaned wheat per day, costing for three men and two horses, 4 cts. 4 6-10 mills per bushel, or cleared up at 4 cts. 9 8-10 mills, over board, or including board of men and team, 7 cts. 8-10ths of a mill per bushel—or in good yield about half that sum.

Westinghouse's power required less travel of team, being about 1.6 miles per hour, threshing 148 bu. per day, costing with three men and two horses, 2 cts. 7.7 mills per bu. over board, or cleaned up, 3 cts. 2.9 mills per bu., or including board, 4 cts. 5.8 mills per bu.—or in good yield about half that sum, thus showing at a glance, that while Badger's team travelled 30 per cent. faster, he threshed 45 per cent. slower, costing 70 per cent. more per bushel than with Emery's power; and that with Westinghouse's the team travelled 19 per cent slower—threshed 9 per cent. slower—costing 10 per cent. more per bu. than with Emery's.

It is proper to remark here, that Westinghouse was at one time the agent for selling the Emery power, and but recently has made the kind used at these trials, which, excepting an alteration in increasing the gearing, (to its disadvantage in strength and durability,) is in all other respects essentially the same as the Emery power, and is claimed to be a bare-faced infringement of his letters patent, and legal proceedings have been directed against him therefor—thus establishing beyond cavil the superiority of the Emery's Endless Chain Power over all others, and particularly the *rack and pinion*.

The writer would willingly stop here but for the reason that an unfair, equally erroneous and unjust comparison is made in said report, between the two premium machines in the different classes, which is wholly foreign to the subject, and drawn from prejudice or the want of a proper understanding of the long series of experiments accompanying the same, and is not deducible from anything connected with the reports of the experiments.

Notwithstanding the report says—"These different classes cannot be compared with each other, your committee has viewed them as unconnected," in the very next paragraph it says, "The table shows Emery's machine requires twice the time to perform the same work that Pitt's machine will accomplish," then goes on with an ingenious calculation, and carries it through, showing thereby that grain can be threshed by Pitt's machine just 3 7-10 mills less than with Emery's, and that, "This difference will pay the extra interest on the cost of the larger machine, the expense of keeping it in repair, and the cost of an elevator to remove the straw to the stack-yard." Again it says, "These advantages belong alike to all the machines of the class of which Pitt's is the representative," while Hall's, in the same trial, of the same class, and the next best, came, by the same rule, more than 44 per cent. short of Pitt's, while the public well know the relative merits of the two are barely discernible. And again it says, "An earnest endeavor has been used to ascertain and record facts in relation to each machine, with the nearest approach to mathematical accuracy, and from such premises to determine merits and excellences," and in the next line it says, "It would mislead the farmers of the State, and do injustice to the inventors, if the results exhibited in the above table are allowed to stand as a correct exhibit of the ability of the several machines to separate wheat from straw."

Next it assumes, "360 lbs. of grain as a fair yield from 100 sheaves, and that 4,500 sheaves is a day's work for Pitt's machine, making 270 bu. per day with 7 men—$7; 8 horses at $4—$11—4 cts. 7-10ths of a mill per bu.

The next assumption is, that as it takes Pitt's 5¼ minutes and Emery's 10½ minutes at Geneva, and that if 270 bushels is a day's work for Pitt's, then half that, or 135 bushels is a day's work with Emery's; and the calculation includes five men for even this small day's work, instead of three, costing, per report, 4 cts. 4 4-10th mills per bush.

Now as the whole quantity threshed at Geneva averaged but 171 lbs. per hundred sheaves, in the above calculations the yield is more than double that at Geneva, and according to the same rate as actually threshed by Pitt's there, he would have obtained 743 bush. in ten hours, or just 2¾ times more than is reckoned a fair days work in this "comparison;" or in other words, that Pitt's was working 2¾ times faster than could be kept up through the whole day, which is readily accounted for by those who witnessed it, as the fatigue of the team, after threshing 5 min. 30 sec., was greater than was caused by the whole threshing done on all the Endless Chain Powers which were operated by the same team in quick succession, requiring in one, and the last case, 17½ minutes, and in all 41½ minutes.

Now, where is the justice of reducing the quantity in good grain to 135 bush., while 161 bush. was actually the rate of threshing poor grain, a deduction of over 16 per cent., while the Pitt's power, which has been shown to have been worked 2¾ times faster than in the comparison, is made the standard, and its time alone considered as the index of its capacity.

To show the fallacy of this, let us reduce the trial at Geneva from 5 min. 30 sec. to what it should have been, or 2¾ times—15 min. 7½ sec., which, compared with the correct time of Emery's threshing, which is 10 min. 30 sec., shews that instead of requiring more time, Emery's worked the fastest by 4 min. 23 sec., or 40 per cent. faster than Pitt's, or equal in good grain to 378 bush. per day, instead of 135 bu. This is good logic, and based upon the materials in the report and "comparison" there made.

If to these estimates be added to Pitt's the boarding of men and horses, the cost would come up to 6 cts. 1¼ mills per bush., while if the board of three men and two horses be added, (being all the force used unless the owners of the team are counted, who, being fearful for the safety of their horses, no harness being allowed, attended and held them during each experiment, it being the first time they had been on a power,) the cost with Emery's power would be but 4 cts. 3 4-10th mills per bu., making a difference in favor of Emery's machine of 1 ct. 8 1-10th mills per bush., or 30 per cent. less cost, instead of 9 per cent. more than with Pitt's, as the "comparison" would have it.

Although 270 bush. is more than an average day's work for Pitt's machine, with any number of men and horses, and especially with 6 and 7 men and 8 horses—it is not unusual that 250 bush., and in very many instances 200 bush., have been threshed per day with the same team and four and five men all told, with the Emery power. While these numbers are not published as an average capacity for the Endless Chain Powers of Emery's Patent, two hundred bushels of wheat, of average yield, is their warranted capacity with horses weighing 1000 lbs. each, and four men to attend it.

So much for this "comparison." If the relative capacity, utility, portability, and cost, both of machines, as well as running the same, is not established in favor of the Endless Chain Power of Emery's Patent, not only over all others of its class, but over the best of the larger kinds of Lever Powers, by at least 33 per cent., then such trials and experience cannot establish anything.

As to the philosophical remarks in the report, concerning the moments of cylinders, as also their construction as whole or open, or the use of various contrivances for reducing friction and proper lubrication of machinery, as also the simplicity of the construction of the premium thresher, with its teeth 3 inches long, (while the report says 1¼ is better,) &c., I must omit, or leave the subject for another notice, or for those who are sufficiently qualified to comprehend so great a subject.

Having consulted several members of the committee, both before and since the publication of the report, and pointed out these errors, and learned from them that, having made their calculations, based on what they considered correct principles, they still adhered to the report, with a conviction they had done justice to the subject and all concerned. I would not in any manner wish to impeach their motives, while I do question the results at which they arrive.

H. L. EMERY.

Albany, January 1, 1851.

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[2-tf] 216 Pearl st., New York.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no farther preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

July, 1852, M. F. REYNOLDS.

Important to Farmers.

IT IS generally conceded by all intelligent farmers that cutting the food for cattle will save from 25 to 30 per cent. Berthold's Oblique Rotary Corn Stalk, Hay and Straw Cutter, is conceded by all that have used it to be far superior to any other, as it destroys all hard substances in the stalk leaving it soft and easily eaten. It turns very easy and is not liable to get out of order, and, with care, will last an age. It has been awarded Four First Premiums and a Silver Medal, by the American Institute. For further particulars address (post paid) the patentee, H. W. BERTHOLF, Sugar Loaf, Orange Co., N. Y., or LONGETT & GRIFFING, 25 Cliff St., New York, who are agents.

☞ Patent Rights for sale. [11-3t]

Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 10,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canadas. [See records of the Fairs for the last four years.]

Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO.,

Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-tf]

Emery & Co.'s Improved Horse Powers, Threshers, and Seperators.

THE undersigned have been appointed sole agents for the sale of Emery's new Patent Improved Horse-Powers, Threshers, and Separators, in the city of New York. The State Agricultural Warehouse is the only depot where this superior Power can be had.

LONGETT & GRIFFING,
7-tf. State Ag. Warehouse, 25 Cliff st., New York.

Farmers' Club.

THE official report of the Farmers' Club of the American Institute, is published in the *American Artisan*. This Club does as much as any in the country to disseminate useful, practical, and scientific information among agriculturists. Send Two Dollars for a year's subscription, to

JOHN BULLOCK, No. 9 Spruce st., New York.

NURSERY NOTICE.

A Rare Chance for Beginners.

THE subscribers, being desirous of clearing the land for other purposes, offer for sale the coming spring, at very low rates, and in lots to suit purchasers,

15,000 Apple trees, 2 years from graft.
25,000 " 1 year "
2,000 Pears on Quince, 1 year from bud.
5,000 Standard Cherries, 1 year from bud.
2,000 Peaches, 2 years from bud.

Also, 10,000 yearling Cherry Seedlings, root-pruned.

The trees are well grown, in good condition, and may be relied on; and for beginners this is a rare chance, not only for obtaining a marketable stock sooner and cheaper than the usual mode, but also for securing as good an assortment as can be desired, comprising the principal varieties of merit now cultivated in our country.

All communications, &c., should be sent in as early as possible, to prevent disapgointment or delay.

Catalogues furnished to all post-paid applicants enclosing one postage stamp. Address

SHEPPARD, CHERRY, & CO.,
Feb'y, 1853. River Bank Nursery, Rochester, N. Y.

IMPROVED SUPERPHOSPHATE OF LIME, and C. Deburg's No. 1. Superphosphate of Lime.

IN the December number of the Working Farmer, the undersigned is charged with selling superphosphate of lime made by a different manufacturer than Prof. J. J. Mapes, and recommending the same to be of better quality than his superphosphate of lime. We, in answer, do say that we sold upward of one hundred tons of C. Deburg's No. 1 Superphosphate of Lime. We also have and do now recommend it as a better article than that made by Prof. J. J. Mapes, as we had both analyzed by one of the best chemists in this country, and found that made by C. Deburg a superior article. It is made of bone coal dissolved in sulphuric acid, after which a large quantity of Peruvian guano is added, likewise the residue of ammonia chambers, which of itself is an extraordinary fertilizer. We do recommend to every purchaser to request analyses from the vender of the so-called Improved, also of C. Deburg's No. 1 Superphosphate of Lime, and purchase subject to such analyses.

LONGETT & GRIFFING,
February, 1853.—1t. 25 Cliff street, New York.

Farm for Sale

THE subscriber offers for sale his farm in the village of Attica, N. Y., containing 137 acres of land, with convenient and comfortable dwelling house, three grain and hay barns, horse barn, and other out buildings.

It is well adapted for a stock or grazing farm, and being located in the village, can be profitably used for pasturing, if desired.

For terms, &c., apply to the subscriber, by letter or otherwise. S. MASON.

Attica, Wyoming Co., N. Y., Feb'y, 1853.—1t*

Superphosphate of Lime.

THE genuine article, manufactured by C. Duburg, in bags of 150 lbs. each. The subscribers have made a contract for a large quantity. We are now prepared to supply any quantity that may be ordered. Farmers and gardeners would do well to call on us before purchasing elsewhere, as we are now able to sell for a less price than heretofore offered. Every bag is branded "C. Duburg, Extra, No. 1."

LONGETT & GRIFFING,
State Agricultural Warehouse, No. 25 Cliff Street, New York. [11-tf]

The Ever-green Sweet Corn.

A FEW BUSHELS of this new and valuable variety of corn, from seed raised by Prof. Mapes, for sale. Per bushel, $10; per half peck, $2; per quart, $1. Sent by express to any part of the United States on receipt of the money by mail. Seedsmen supplied. This is beyond all doubt the most prolific variety of sweet corn ever grown. No farmer should be without it. Address

ALFRED E. BEACH,
Feb., 1853.—1t* White Plains, Westchester co., N. Y.

Farm Implements for California.

BURRALL'S Prize Reapers, Mowers, Threshers, and Separators; Clod Crushers, Field Rollers, Cultivators, Horse Powers, &c., &c.; all warranted of the best material and workmanship,—strong, simple, and reliable,—expressly for that market. Made, and sold cheap for cash, by

THOMAS D. BURRALL,
[2-3t] Geneva, Ontario Co., N. Y.

Emery's Patent First Premium, 1852,
RAILROAD HORSE POWER,
THRESHING MACHINES, SEPARATORS, &c.,
Western New York Agency.

E. D. Hallock, Agricultural Warehouse,

No. 50. State St., Rochester, N. Y.

THE Subscriber, late from the Albany Agricultural Works, Warehouse, and Seed Store, where he has been engaged for the past six years, has secured the sole Agency for the sale of Emery's Patent Railroad Horse Power for Rochester and vicinity, so widely and favorably known throughout the country, and which has, without exception, taken every highest premium awarded in the States of Ohio, Michigan, and in New York, for the best Railroad Horse Powers, in 1850, 1851, and again in 1852, also at the Provincial Fair of Canada, recently held at Toronto, was awarded a Diploma and £2, of which the judges highly commend the principle and workmanship of this Power, now offer them at manufacturer's prices, with the transportation added, and subject to the warrantee as follows:

"To work to the satisfaction of the purchasers as represented in Circulars and Catalogues, or to be returned within three months and full purchase money to be refunded."

For further particulars see Circulars and Catalogues, which are furnished gratis on application to the subscriber.

The attention of the Farming public is solicited, and a careful investigation into the construction of this Power, and its comparative merits, as well as price, is requested before purchasing elsewhere.

The Wheeler Power is also offered *ten* dollars cheaper than heretofore by any other agency, and subject to same warrantee as given by others for the same kinds. Samples will be kept constantly on hand, and to insure promptness and avoid disappointments in supplying them, farmers are requested to send in their orders at as early a date as possible.

He will keep for sale, Emery's Seed Planters, the best in use; Circular and Cross Cut Saw Mills, Feed Mills, Corn Stalk and Hay Cutters, Corn Shellers, Churning fixtures, &c., adapted to the Power.

Also, Reapers, Mowing Machines, Grain Drills, Plows, Harrows, Cultivators, Corn Shellers, Hay Cutters, Fan Mills, and agricultural and horticultural implements generally. He will be prepared to furnish dealers with Dunn and Taylor's well known Scythes; also, Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools, at manufacturers' prices, wholesale and retail.

Particular attention is called to A NEW PLOW, which is believed to be the best cast-iron Plow ever offered, and which is warranted to do better work, with less expense of team than any plow heretofore sold in this vicinity, while the price is less than for any other equally well finished.

The "uniform one-price, cash system" will be adopted, with the prices as low as the cost of articles and just compensation for labor and time will allow. Farmers and others are invited to call and examine the stock of Machines and Implements,—and are assured no effort shall be wanting to meet promptly the wants of a discriminating public. [11-tf] E. D. HALLOCK.

D. S. MANLEY & BROTHER,

BUFFALO NURSERY,
Buffalo, N. Y.

HAVING purchased this well established Nursery of its original proprietor, Col. B. Hodge, we take pleasure in offering for sale an unusually fine assortment of

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS.

Our Fruit Department is supplied with fine healthy trees on their own stocks, of all the desirable varieties now in cultivation, together with Cherries and Pears dwarfed on superior stocks.

The Ornamental Department includes all the best varieties of Evergreen and Deciduous trees.

Roses.—One of the finest collections in this country, comprising all that are new and rare.

Dahlias.—An unrivalled selection of Dahlias, which has been procured at great cost.

Peonias.—We call particular attention to our stock of Peonias, both herbaceous and tree varieties.

The stock of *Shrubs* is unusually extensive and was collected by the late proprietors with peculiar care.

Of Currants, Gooseberries, Raspberries, Grapes, and Strawberries, we have vigorous plants of the best varieties.

It will please us to furnish all applicants with our Catalogue.

NEW, RARE AND VALUABLE SEEDS.

NEW VARIETY OF SWEET CORN.

Hovey & Co., No. 7, Merchants' Row, Boston, WOULD respectfully inform their friends and the public, that they have purchased the entire stock of the *Old Colony Sweet Corn*, raised by the Rev. A. R. Pope, and described by him in the Magazine of Horticulture, Vol. 16, page 529.

It is a true hybrid, and the most remarkable variety ever produced. It was raised in 1847, from the Southern White Corn, impregnated with the early Sweet Corn of New England. The ears are of a remarkable size, containing Sixteen, Eighteen or Twenty, and sometimes Twenty-Four rows each. In its productiveness it is unsurpassed, a single stock planted after the middle of June producing six ears. It is the richest, sweetest, and most delicious corn known. An analysis of it, and several other sorts, by Dr. T. C. Jackson, shows that it is more abundant in saccharine matter than any other variety, its composition being dextrine, sugar and phosphates, while the common varieties contain considerable oil and gluten.

It has been exhibited before the Massachusetts Horticultural Society for three years, and has not only received the commendation of the Society, but has been awarded the following prizes:

1850. For a new variety of Sweet Corn,.....$2 00
1851. For a *new* variety of Sweet Corn, called the Old Colony,..... 8 00
For superior specimens of the Old Colony Sweet Corn, Silver Medal,..... 5 00
1852. For fine specimens Old Colony Sweet Corn, 2 00

The Committee on Vegetables, of the Massachusetts Horticultural Society, in their report for 1852, remark "That the Old Colony Sweet Corn, raised by Mr. Pope, we recommend as worthy of cultivation by all."

The Old Colony Sweet Corn, though not as early as the Common Sweet, is sufficiently so to produce a perfect crop in New England. Two sowings, one in May the other in June, will supply the table from July until frost. All who have eaten it, pronounce it the most luscious variety, and an invaluable addition to our esculent vegetables.

☞ Single ears 25 cts. each. The trade supplied on reasonable terms.

Splendid Annual from Mexico!

NEW ORANGE GLOBE AMARANTHUS.

HOVEY & CO. have the pleasure of offering to their friends and amateur cultivators of beautiful flowers, one of the most splendid novelties introduced for many years, viz.:

A New Orange-Colored Globe Amaranthus.

In size, the heads are nearly one-half larger than the common Globe; in color, of a deep, rich, glowing orange, with conspicuous yellow stigmas. The plants are also exceedingly vigorous, with linear foliage, and strong, tall stems nearly a foot long, elevating the heads of the blossoms, which literally cover the plants. It is a native of Mexico, and has been in their sole possession three years, during which time it has been the admiration of all who have seen it.

Seeds are now offered for sale the first time, and Messrs. H. & Co. can recommend it as worthy the attention of the trade, and all lovers of elegant annuals.

The flowers of this new Globe were exhibited before the Massachusetts Horticultural Society the past year, and were awarded the Silver Medal.

The trade supplied by the ounce or larger quantity. Single package of seeds, 25 cents. [2-1t]

Culture of Cranberry Vines.

THE variety cultivated mostly in New England are hardy and prolific. They can be raised on upland on rather moist loam, but do the best on low, damp or moist meadow land, with a little sand put around the plant. They may be planted out 1½ to 2 feet apart each way.

Two feet apart, it will take 10,000 plants to the acre. If on low ground, it should be pared, plowed, or burnt over, to take out the grass or weeds, and cultivated for one or two years, until they cover the ground. The yield after that is from 150 to 200 bushels per acre.

Good bearing vines can be furnished in any quantity, and packed so as to be safely carried to any part of the United States. For sale by F. TROWBRIDGE,

At his Tree, Plant, Seed, and Periodical Agency, 55 Union street, New Haven. Conn. [2-1t]

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.

Stocks for Nurserymen.

WE can supply a few thousand Mazzard Cherry seedlings and Plum seedlings of one year's growth, if applied for soon.

Green House and Bedding Plants.

A complete collection, embracing the newest and best varieties of Fuschias, Pompone Chrysanthemums, Double Dahlias, Verbenas, Petunias, Phloxes, Scarlet Pelargoniums, and all the most popular bedding plants, of which a descriptive catalogue will be issued in February.

The following catalogues will be sent gratis and pre-paid to all who enclose a postage stamp:

1. A Descriptive Catalogue of Fruits.
2. A Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c.
3. Annual Spring Catalogue of Dahlias, and select Green House and Bedding Plants.
4. A Wholesale Catalogue, or Trade List.

Evergreen Trees and Shrubs.

The following Evergreens can be supplied by the quantity, at low prices:

Norway Spruce, from 6 inches to 2 feet.
American White Spruce, 2 to 3 feet.
Balsam Fir, 2 to 4 feet.
Austrian Pine, 1 to 3 feet.
Scotch Fir, 1 to 3 feet.
Red Cedar, 1½ to 2 feet.
American Arbor Vitæ, 1 to 2 feet.
Chinese Arbor Vitæ, 2 to 3 feet.
Deodar Cedar, 1 to 1½ feet.
Chili Pine, (Auracaria imbricata,) 12 to 18 inches.
Japan Cedar, (Cryptomeria Japonica,) 1 to 5 feet.
Lofty or Bhotan Pine, (Pinus excelsa,) 1 foot.
Himalayan Spruce, (Abies morinda,) 6 to 12 inches.

And many other rare species and varieties, forming one of the most complete assortments of Conifers in the United States.

ELLWANGER & BARRY,
Feb. 1, 1853. Mt. Hope Nurseries, Rochester, N. Y.

Fruit Scions for 1853.

THE subscriber will furnish Scions for this season's grafting, of the celebrated fruits of Western New York:

APPLE.

Northern Spy,	*Ribstone Pippin,*
Norton's Melon,	*Summer Rose,*
Wagener,	*Rambo,*
St. Lawrence,	*Esopus Spitzenburgh,*
Canada Red,	*Yellow Bellflower,*
Swaar,	*Roxbury Russett,*
Baldwin,	*Early Harvest,*
Pomme Grise,	*Early Strawberry.*
Seek-no-further.	*Autumn Strawberry,*
Hertfordshire Pearmain,	*Early Joe,*
Fameuse,	*Fall Pippin,*
Bourassa,	*Holland Pippin,*
Twenty Ounce Apple,	*Rhode Island Greening,*
Hawley, or Dowse,	*Talman Sweeting,*
Gravenstein,	*Green Sweeting,*
Bailey Sweeting.	*Porter,*

PEARS.

Virgalieu,	*Bartlett,*
Seckel,	*Oswego Beurre,*
Swan's Orange, or Onondaga,	*Brown Beurre,*
	Osband's Summer,

and most of the Foreign varieties.

Apple Scions $1.00 per 100, and Pear Scions Three Shillings per dozen. They will be carefully packed and sent by Express or by Mail. A discount on apple scions will be made to nurserymen.

Early orders are requested, to insure a supply. Address me (post-paid) at Rochester, Monroe Co., New York.

JAMES H. WATTS.

N. B.—In all cases where it is possible, I will send samples of the "Northern Spy" apple. Reference can be made to Mr. VICK, of the "Farmer."

Rochester, Jan., 1852.

10,000 Isabella Grape Cuttings for Sale.

THE subscriber will fill all orders he may receive during the month of February, enclosing one-third of the price of the quantity ordered, the balance to be remitted when they are sent, in the spring, at $1 per 100, or $8 per 1000. These cuttings are well ripened, and contain three buds each.

No charge for packing and starting them by express.

E. A. McKAY,
[2-*1] Naples Vineyards, Ontario Co., N. Y.

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Seneca Lake Highland Nurseries,

HAVANA, CHEMUNG CO., N. Y.

Price and Descriptive Catalogues furnished gratis to all applicants by mail.

HERE can be had, at Wholesale or Retail, all kinds of Fruit Trees, both Standards and Dwarfs, of the largest size and best varieties; Ornamental Trees and Shrubs; Roses; Green House Plants, &c. &c.

Persons wishing to set Apple Orchards with *large* trees, can be suited here.

Among other Nursery stocks, 50,000 Cherry Trees can be had.

Packages amounting to $10 and upwards, delivered *free of charge*, at New York and Dunkirk, or any intermediate station on the N. Y. & E. Railroad.

[2-1t*] E. C. FROST.

The Practical and Scientific Farmer's own Paper.

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, Jr., & JOSEPH HARRIS, EDITORS.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, in Advance.

Five Copies for $2—Eight Copies for $3, and any larger number at the same rate.

☞ All subscriptions to commence with the year, and the entire volume supplied to all subscribers.

☞ POST-MASTERS, FARMERS, and all friends of improvement, are respectfully solicited to obtain and forward subscriptions.

Subscription money, if properly enclosed, may be sent (post-paid or free) at the risk of the Publisher. Address to

DANIEL LEE,
November, 1852. *Rochester, N. Y.*

POSTAGE LAW.—By the new Postage Law, which took effect on the 1st of September last, the postage on the *Genesee Farmer* for one year is as follows,—when paid quarterly in advance:

Anywhere in the State of New York,..3 cts.
Anywhere in the United States,.....6 cts.

STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.